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March
MRH
inside!



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- The ubiquitous USRA Mikado
- Run a boxcar with the door open
- Resize a freight house to fit the space
- Weathering with AK pencils
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EXTRA**

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JOE FUGATE



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JIM SIX



Modeling boxcars with open doors

STEPHEN KAY



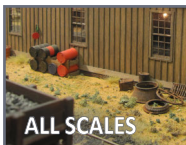
Replicating modern railcar tagging

NICK CAMPBELL



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PUBLISHER'S WELCOME

introduction



MRH Running Extra | March 2021

JOE FUGATE SAYS FORGET MESSY
PLASTER CLOTH, USE MASKING TAPE ...



RATE THIS ARTICLE

PLASTER-IMPREGNATED GAUZE OVER CARDBOARD STRIPS HAS BECOME A POPULAR

model railroad scenery method over the past few decades.

However plaster gauze has some drawbacks.

After you apply the gauze, you're not done – you still need to apply a second layer of plaster to seal things up. Both the initial application of the plaster gauze and the second sealing layer of plaster can drip on the floor under the layout, as well as onto the benchwork and the wiring.

And plaster gauze tends to sag around the cardboard strips, leaving your scenery looking like someone who has been on a hunger strike [1].

With masking tape, you accomplish the same task of covering the cardboard strips, but it's far quicker and leaves no mess [2, 3]. And you don't get the exposed cardboard strip "ribs" as in [1].

Now with the holes completely sealed, I paint the masking tape a dirt brown color [4] to both make it look more finished and to provide tooth for the final plaster terrain layer.

Also if you paint the tape your dirt color, the tape over the cardboard



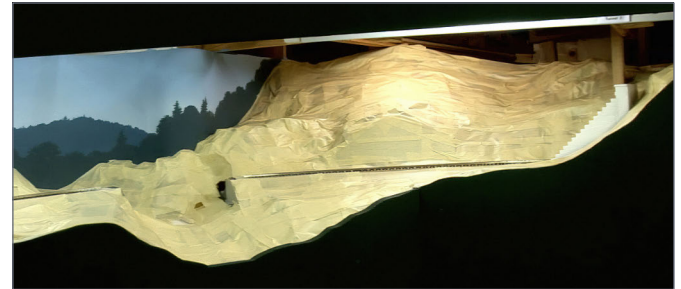
1. This photo of some new scenery on Charlie Comstock's Bear Creek & South Jackson shows what can happen with plaster cloth over cardboard strips.

PUBLISHER'S WELCOME | 2

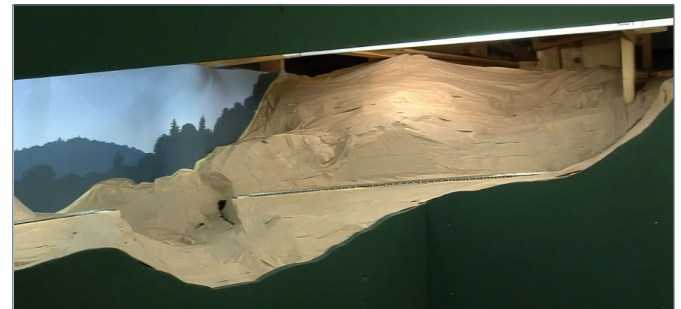
2. Making scenery forms with cardboard strips and hot glue has become popular and that's the method I used on my Siskiyou Line 1 layout. It goes up fast and you can't beat the price.



3. Instead of plaster cloth, I use good old masking tape to cover the cardboard strips. It's extremely easy to apply and it goes on fast. Plus you don't get the exposed ribs look as in [1].



4. I like to "give the tape some tooth" for the plaster by painting it with my latex paint dirt color. In a pinch, this can serve as rapid scenery to keep stuff from falling to the floor.



strips makes great temp terrain until you get a chance to apply the plaster.

Once you add the final plaster layer, you have no drips falling though because the tape has sealed everything!

Any old cheap masking tape will do. Once you've got the plaster down, the tape may age, decompose, or whatever and you won't care. It served its purpose keeping the wet plaster from falling through.

Bottom line, the masking tape over the cardboard strips scenery method is fast, cheap, and super effective. Way better than plaster cloth! ☑



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THE LIMITED MODELER

column

Images are from the author's collection, except as noted.

MRH Running Extra | March 2021



JIM SIX SHOWS HOW THE USRA
LIGHT MIKADO CAN BRING
PROTOTYPICAL STEAM TO YOUR PIKE ...



1. B&O 454 is a class Q3 USRA Mikado. By this photo from the 1950s, the original tender had been replaced with an extended-length Vanderbilt tender for greater water capacity and extended range between water stops. *Ray Breyer collection*



DOING MORE WITH LESS

THE LIMITED MODELER | 2

I HEAR COMPLAINTS FROM MODEL RAILROADERS ALL OF THE TIME that there are no steam locomotives representing their favorite railroads. While this is sort of true, it isn't really true – thanks to availability of USRA Mikado models. Most model railroaders don't realize just how many railroads had USRA Mikes on their rosters.

Of the almost 2,000 locomotives from the three major locomotive builders – Alco, Baldwin, and Lima – under the United States Railroad Administration (USRA), 625 were 2-8-2 light Mikados. It was one of, if not THE most successful steam locomotive in North American railroad history, and railroads continued to order clones of the USRA design after the USRA was disbanded in 1920.

The USRA light Mikado worked well, was reliable, and was simple to maintain – everything a railroad could want from a medium-duty locomotive, making it the one true “universal locomotive” of the steam era. So successful was this locomotive design that most railroads made few changes to them over their careers, which lasted until the end of steam. Primarily built for freight, these locomotives could be found serving anywhere from mainline freights to locals, to switching.

Because so many railroads had USRA light Mikados, several model manufacturers have offered this popular prototype in various scales, primarily HO. The availability of models for this prototype allows modelers of many different railroads to operate their layouts in the steam era, while the wide use of the prototype makes it fit just about anywhere.

The New York Central Lines had the most USRA Mikados, at 194 units, followed by the B&O with 100. The Pennsylvania Railroad had 38 Mikes on its roster during the USRA years, but it sold 33 of them to the Frisco and MoPac as soon as the USRA released control in 1920. The PRR viewed the USRA to be a New York Central design, and they could not deal with that!



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Railroad	Quantity	Class	Road numbers
Baltimore and Ohio Railroad	100	Q-3	4500-4599
Chicago and Alton Railroad	10	L-4	875-884
Chicago and Eastern Illinois Railroad	15	N-2	1925-1939
Chicago Great Western Railway	10	L-3	750-759
Chicago, Indianapolis and Louisville Railroad ("Monon")	5	J-2	550-554
Chicago, Rock Island and Pacific Railroad	9 (+11 from T&P)	K-55	2300-2308,
Grand Trunk Railway	15	M-3	440-454
Grand Trunk Western Railroad	25	M-3	455-479
Lehigh and Hudson River Railway	4	80	80-83
Louisville and Nashville Railroad	18	J-3	1500-1517
Maine Central Railroad	6	S	621-626
Missouri Pacific Railroad	15 (+10 from PRR)	MK-63	1301-1315,
Monongahela Railway	10		170-179
Nashville, Chattanooga and St. Louis Railway	10	L2-55	650-659
New York Central Railroad	95	H-6a	5100-5194
New York Central subsidiary Cleveland, Cincinnati, Chicago and St. Louis	25	H-6a	6089-6113
New York Central subsidiary Indiana Harbor Belt Railroad	24	H-6a	400-423
New York Central subsidiary Lake Erie and Western Railroad	15	H-6a	5540-5554
New York Central subsidiary Michigan Central Railroad	20	H-6a	7970-7989
New York Central subsidiary Toledo and Ohio Central Railroad	15	H-6a	9732-9746
New York, Chicago and St. Louis Railway ("Nickel Plate Road")	10	H-6a	601-610
Pennsylvania Railroad	33	L2	20006-20038
Pennsylvania Railroad subsidiary Grand Rapids and Indiana Railroad	5	L2s	9627-9631
Pere Marquette Railway	30	K-8	1011-1040
Pittsburgh and West Virginia Railway	3		1000 - 1002
Rutland Railway	6	H-6a	32-37
Seaboard Air Line Railroad	10	Q-1	490-499
St. Louis - San Francisco Railway	(23 from PRR, 10 from IHB)	4000	4000-4032
Southern Railway	25	Ms-1	4750-4774
Texas and Pacific Railway	11	H-1	550-560
Union Pacific Railroad	20	MK-Spl	2295-2314
Union Pacific subsidiary Oregon Short Line Railroad	20		2480-2499
Wabash Railroad	20	K-2	2201-2220
Western Pacific Railroad	5	MK-55	321-325

2. This table shows railroads that operated the USRA light Mikado, in alphabetical order. Compiled from several sources.

I have been promoting smaller layouts for a few years now, especially "one-town" layouts. Such layouts don't need dozens of locomotives. In fact, one to maybe five or six locomotives will be enough. As such, the readily available USRA Mikado is perfect for such layouts.

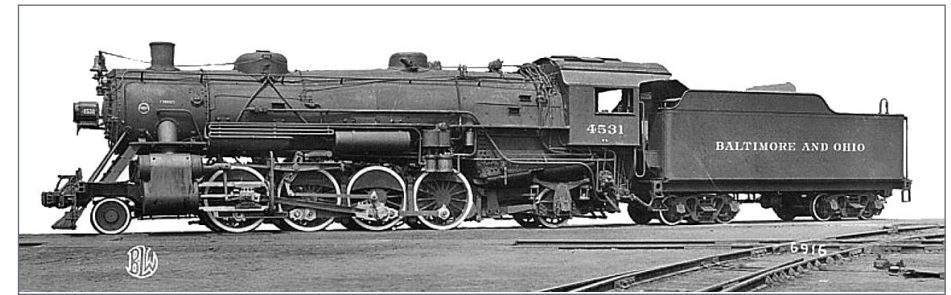
In this article we will look at a variety of USRA Mikados, representing 34 railroads. The list of railroads that had USRA 2-8-2 light Mikados should drive home the point that a lot of railroads operated this popular steam locomotive [2].

BALTIMORE AND OHIO (B&O) 4500-4599

During 1918 - 1919, the B&O took delivery of 100 USRA light Mikados from Baldwin. The railroad classified them as Q3, and gave them numbers 4500-4599. They were fitted with a high-mounted headlight at the top of the smokebox front.

The Q3s had a long service life and were scrapped only in 1959. My dad's best friend Louie Serase was a fireman on a Q3 out of Lorain, Ohio after returning home from the Second World War.

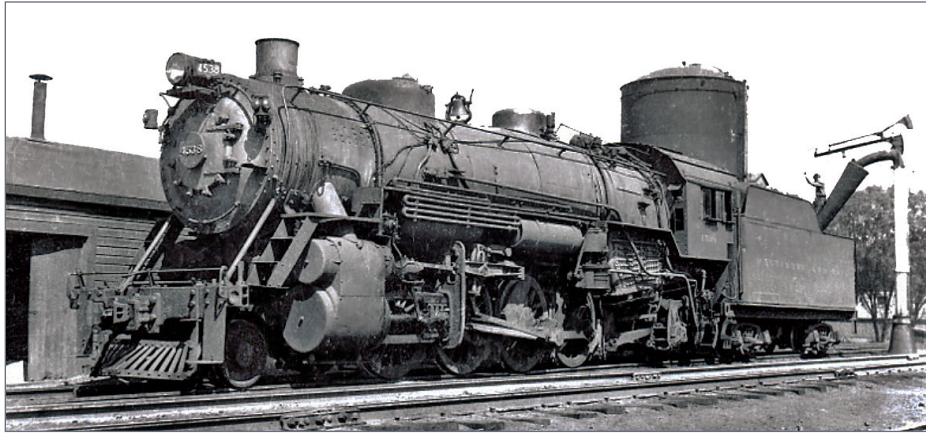
Modeling a B&O Q3 USRA Mike would mean relocating the bell and headlight, and simple matter of painting and lettering, then applying some weathering.



3. Baldwin Locomotive Works builder's photo of B&O 4531. Note that the locomotive was built with a centered headlight.



4. The 4522 is a B&O class Q3 USRA light Mike. This photo was taken before the tender was replaced with a large Vanderbilt tender about 1950. Ray Breyer Collection



5. B&O Q3 #4538 takes on water. Note this locomotive has a cow catcher front pilot and still has the original USRA tender. The fireman's side of the cab has been extended to make room for the head-end brakeman.

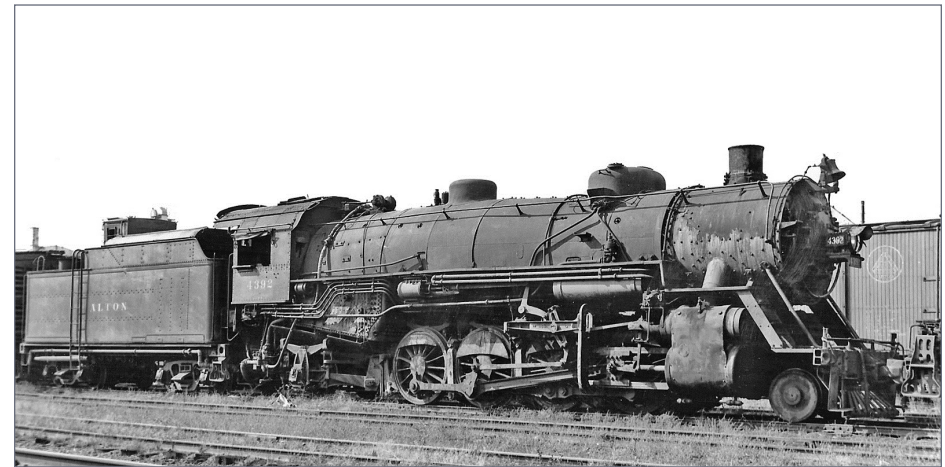
CHICAGO & ALTON RAILROAD (C&A) 875-884

The Chicago & Alton Railroad linked Chicago to Alton, Illinois, St. Louis and Kansas City, Missouri. B&O purchased the C&A in 1931, then sold it off to the Gulf, Mobile, & Ohio in 1947. The C&A had 10 USRA light Mikados. Broadway Limited offers a USRA light Mike lettered for the Alton.

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6. This is Alton 4390 circa 1950. It is a very standard USRA Mikado with very few changes. The original headlight has been replaced with a more modern one. The tender's coal bunker has side extensions for added capacity. That's about it. *Ray Breyer collection*

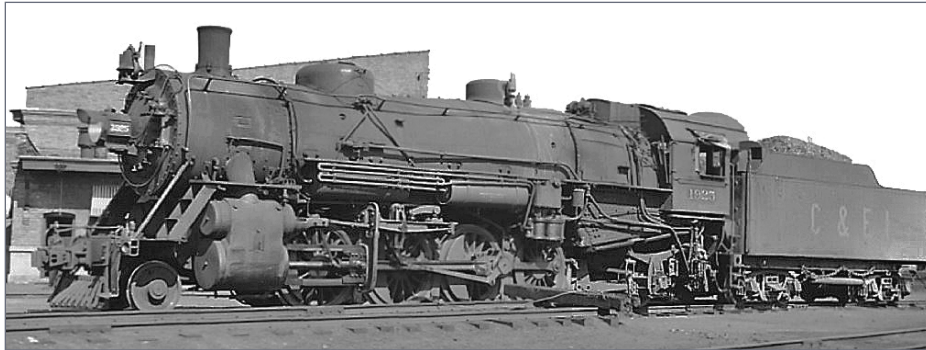


7. This is Alton 4392 circa 1950. A new headlight and coal bunker extensions are the only apparent changes. Note the cow catcher front pilot. Both the 4390 and 4392 have shields above the sander valves on both sides of the sand dome. *Ray Breyer collection*



CHICAGO AND EASTERN ILLINOIS (C&EI) 1925-1939

The C&EI classified its 15 USRA Mikados, which it received in 1918, as N-2 and numbered them 1925 – 1939. The photos here show both the early (1925) and the late schemes (1928) used by the C&EI. Modeling the C&EI USRA Mikes would mean the adding the shroud ahead of the cab and a few details, painting and lettering, then applying some weathering.



8. C&EI 1925 in a 1930 photo, built by Alco in 1918. The locomotive is in the early paint scheme. *Ray Breyer collection*



9. C&EI 1928 in a 1942 photo, built by Alco in 1918. She is painted in the later paint scheme. Note the shroud covering some of the plumbing appliances ahead of the cab atop the firebox. *Ray Breyer collection*

CANADIAN NATIONAL (CN) 3740-3757

Although the Canadian National was never under the control of the USRA, it purchased 18 locomotives built to the USRA design (clones). I like the cow catcher pilot and the Elesco feedwater heater atop the smokebox. Note the “above-center” headlight.

Modeling it would be a simple project that would result in a really nice model. You’d only need to add the feedwater heater and some plumbing. Painting, lettering, and weathering the model would complete the job.



10. Very much appearing to be a USRA Mikado, this CN locomotive is one of 18 clones that the CN ordered. Note the Elesco feedwater heater atop the smokebox and the spoked pony truck wheel. *Ray Breyer collection*



FRISCO (SLSF) 4000-4034

The SLSF had 35 USRA light Mikados, all of which it received second-hand from the PRR. Lima built the locomotives in 1919, but PRR rejected all of them before they entered its roster. The Frisco numbered the locomotives 4000-4034.

Modeling Frisco USRA Mikes would mean extending the cab height. Painting, lettering, and weathering completes the job.



11. SLSF 4002 has a modified cab with a flatter roof. This was a more typical Frisco cab. Note the extended coal bunker for more coal capacity. The tender has a “doghouse” for the head-end brakeman to ride in. *Ray Breyer collection*



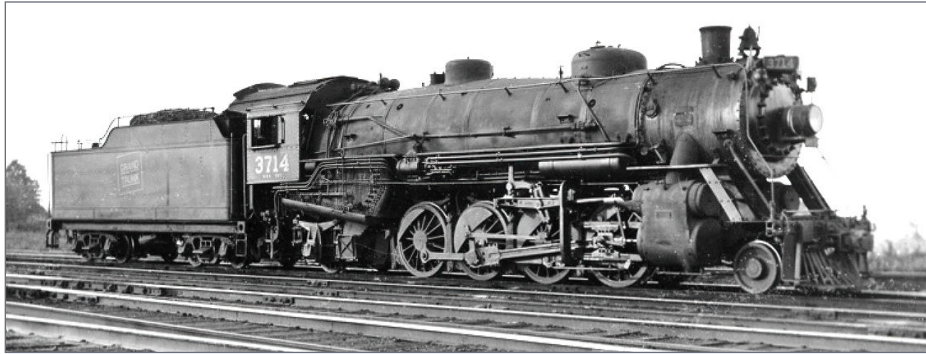
12. SLSF 4030 has a modified cab. For some reason Frisco decided to extend the cab height by cutting the cab apart horizontally at cab window height and splicing in new sheet metal making the cab a couple of feet taller. There is also a shroud over the sander valves on both sides of the locomotive. The 4030 also has a doghouse atop the tender. *Ray Breyer collection*

GRAND TRUNK (GTE / GTW) 440-479

The Grand Trunk USRA Mikados were standard with very few modifications. The one detail addition I see is the winged number boards at the front face of the smokebox, though the location of this feature was not consistent. Note photos [13 and 14] of the 3714 and 3737.

Appliances atop the smokebox are a little different too. Modeling the GT USRA Mikes would be a simple matter of relocating the bell and adding the winged number boards. Then, paint and letter the model and applying weathering.





13. GTE 3714 The 3714 is almost standard USRA configuration.



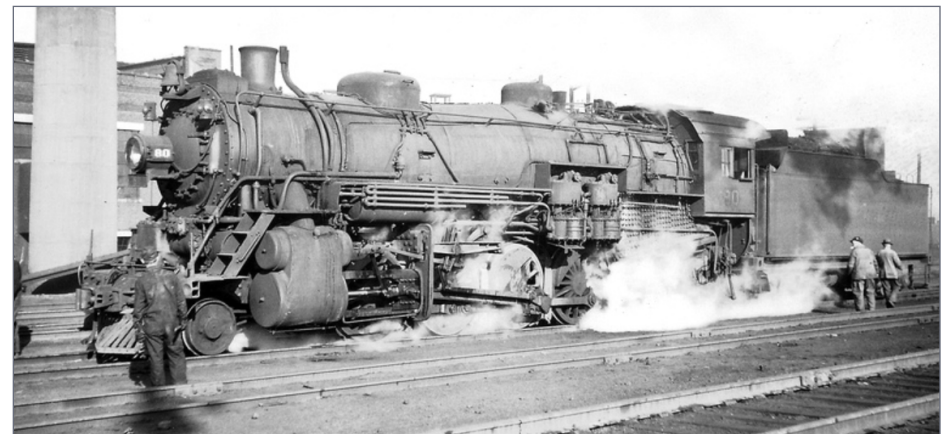
14. GTW 3737 Note the ladder up the side of the tender and the rerail frog between the tender trucks. *Ray Breyer collection*

LEHIGH AND HUDSON RIVER (L&HR) 80-83

The L&HR's four USRA Mikes had Worthington feedwater heaters and two compound air pumps. Otherwise, they appear to be standard USRA Mikados. Modeling the L&HR USRA Mikes would be a very simple matter of adding a few details to the pilot deck, fitting the feedwater heater atop the smokebox, and fitting a second compound air pump, then painting, lettering, and weathering.



15. LH&HR #83 has a train of boxcars in tow. Note the two air pumps and the Worthington feedwater heater atop the smokebox between the bell and the smokestack. Also note the cow catcher front pilot. *Ray Breyer collection*

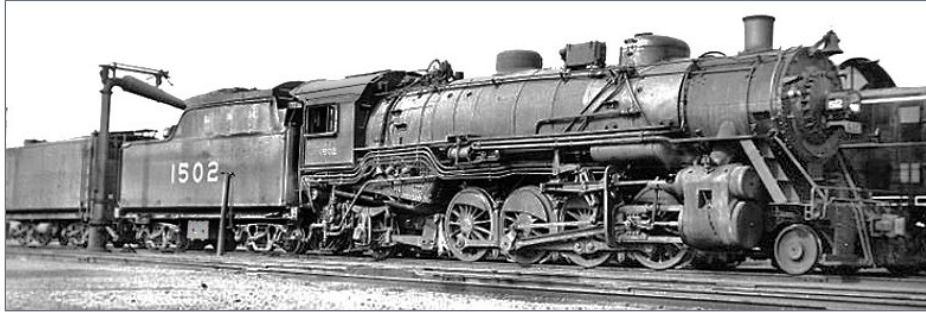


16. The L&HR's four USRA Mikes including #80 all had a few upgrades and changes made to them – probably in the late 1920s. Included were twin compound air pumps, Worthington feedwater heater, and some equipment added to the top of the front pilot. Somehow these additions made the locomotive appear larger than it really was. *Ray Breyer collection*



LOUISVILLE AND NASHVILLE (L&N) 1500-1517

The L&N had 18 USRA 2-8-2 Mikados. They were few in number but long-lived. They were also standard USRA locomotives with very few changes made over their years on the railroad. Modeling the L&N USRA Mikes would be a very simple matter of adding a few details, painting and lettering, then applying some weathering.



17. L&N 1502. This is a late photo, probably taken in the early 1950s. Note the diesel switcher at the right. Also note what appears to be a “train control” box atop the boiler just to the rear of the sand dome. That was a late-added feature. Also note the box under the tender between the trucks. And don’t overlook the tag-along “water tender” behind the regular tender. *Ray Breyer collection*



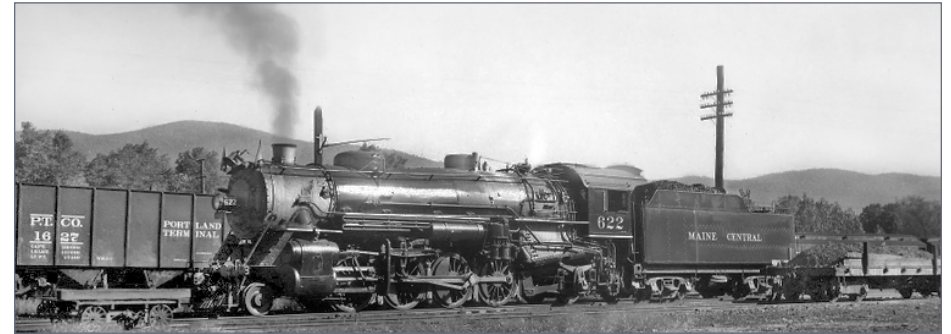
changes or additions to them. I really like that fat steam whistle next to the steam dome. I can hear it now! Note the chain and the rerail frog hanging along the tender frame. These were great locomotives and proof that the government doesn’t do everything wrong.

18. L&N 1505 is a very standard USRA light Mike. Most railroads liked their USRA Mikes so much that they made precious few

MAINE CENTRAL (MEC) 621 - 626

While the MEC was not a large railroad, it was important to the northeast. The railroad had six USRA Mikados. As with all of the other railroad’s USRA Mikes, they were built to standard USRA configuration, then over their time on the railroad received a few minor changes.

As with the other railroads, modeling them is a very simple matter of paint, lettering, and adding a detail or two. Of course, weathering will put the finishing touch on any model locomotive.



19. MEC 622 is a “perfect” USRA 2-8-2 Mikado. Even the tender is the standard USRA tender. Lettering is classical railroad Roman. This circa 1930s photo is inspiring for me. *Ray Breyer collection*



here by MEC 625. *Ray Breyer collection*

20. The USRA light Mikado was truly the “American” locomotive. Classical design and appearance made them attractive. The MEC never cluttered the appearance of their USRA Mikes, as shown

MONON (CIL) 550-554

The Monon has been a popular railroad among modelers since the 1960s, and maybe before. Should you want to build a steam-era layout based on the Monon, the railroad had five USRA Mikados. They were all standard USRA Mikes, essentially unchanged since they were built.

All that is needed are a few added details like cab sunshades and a poling pole to the tender. Then paint, decal, and weather one of the available models, and you are in business.



21. MONON 554 is a basic USRA Mikado. The Bachmann, Broadway, and Trix Mikados are all a perfect match for these locomotives.

NICKEL PLATE ROAD (NKP) 586-671

Until 1917, the Nickel Plate Road was part of the New York Central Lines. In 1917 the NKP gained its independence and came under the ownership of the Van Sweringen brothers of Cleveland, Ohio.

The USRA allocated 10 2-8-2 Mikados to the Nickel Plate. The railroad liked the USRA Mikes so much that they added 76 more clones, some with various upgrades. This gave the NKP 86 total USRA Mikados – third most among U.S. railroads.

I called upon Nickel Plate expert Ray Breyer for more information. Ray tells me that the NKP was allocated 10 original USRA light Mikes, Class H-6a, numbers 601-610, built in 1918. Liking these locomotives, the NKP then started buying copies, each with assorted improvements over the original design:

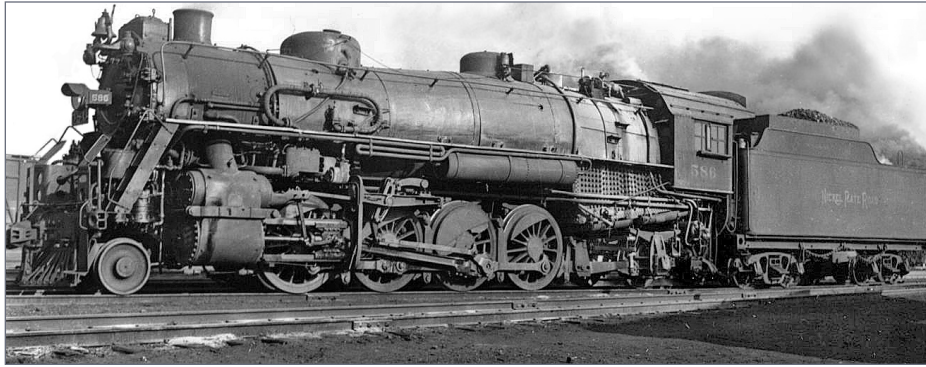
- H-6b, numbers 611-615, built in 1920.
- H-6c, number 616, built in 1921.
- H-6d, numbers 617-631, built in 1922.
- H-6e, numbers 632-661, built in 1923.
- H-6f, numbers 662-671, built in 1924.

The NKP inherited another 15 original USRA light Mikes with the purchase of the LE&W from the NYC in 1924. Those engines were originally NYC Lines/LE&W class H-6, numbers 5540-5554, built in 1918. The NKP re-classified them as NKP class H-60, numbers 586-600.

In the late 1920s, the railroad began to make changes to their USRA Mikes for greater efficiency and power. Various other changes to the USRA light Mikes over the years gave them a Nickel Plate family look. It is a safe assumption to say that by 1940 there were no two Nickel Plate USRA Mikes that were identical.

If you like making simple detail changes to your steam locomotives, the Nickel Plate may be the perfect railroad for you. USRA Mikes are readily available. Detail parts are readily available from Bowser and others.

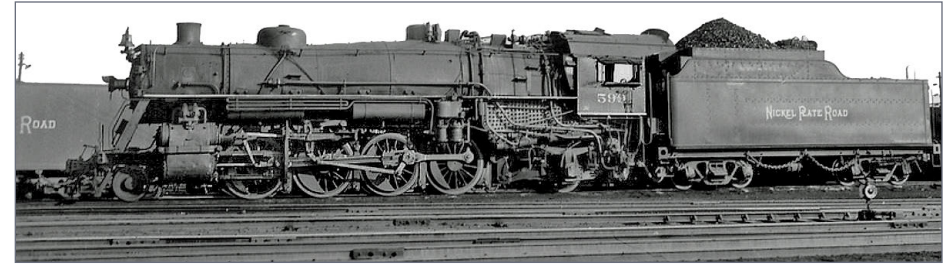




22. This 1938 photo of NKP 586 shows the single compound air pump has been removed from the side of the locomotive. It and a second pump are now located atop the front pilot deck behind shrouds. A modern headlight has been added. There is new plumbing and cylinder braces along with a Worthington feedwater atop the smokebox.



23. This 1954 view of NKP 587 shows most of the modern additions and changes made by the Nickel Plate to its USRA Mikados. Note the horizontal bar stock pilot cow catcher, Mars light above the headlight, "flying" number boards, extended smokestack, and cylinder bracing. The tender remains a standard USRA tender, but with an extended-height coal bunker.



24. This photograph of NKP 599 was probably made circa 1940. You can see the extended-height coal bunker in the tender and some appliance rearrangement atop the firebox ahead of the cab. A wind deflector has been added atop rear of the cab roof. The single compound air pump is in the standard location. While very much NKP, much remained standard about this USRA 2-8-2 Mikado.
Ray Breyer collection



25. This is the same NKP 599 circa 1950. At first glance might be mistaken for one of Nickel Plate's fabulous Berkshires. But it is a USRA Mikado with several NKP changes including a huge tender designed for the Berkshires, dual compound air pumps located on the front pilot deck hidden behind shrouds, cylinder braces, extended smokestack, "flying" number boards, and a modern headlight. It also has a modern cow catcher. This Mikado is set up for fast freight on the Nickel Plate. *Ray Breyer collection*



NEW YORK CENTRAL LINES (NYC, CCC&STL, IHB, LE&W, MC, AND T&OC)

The New York Central Lines was made up of several component subsidiary railroads, and the NYC Railroad itself was only one of them [26]. With a total of 194 locomotives, the NYC Lines had more USRA light Mikados than any other railroad. It classified them H6A.

The USRA assigned light Mikado locomotives to most of the various lines and subsidiary railroads, except for the Boston and Albany (B&A) and the Pittsburgh & Lake Erie (P&LE). However, the USRA did designate several “heavy” Mikados to the P&LE, and the New York Central Lines used light Mikados throughout its system.

Modeling NYC Lines USRA Mikados is simple. Most any model of this prototype is correct for the NYC. All you need to do is buy a model lettered for the NYC or letter it yourself, then apply some weathering, and you are in business. Can’t get any simpler than that.

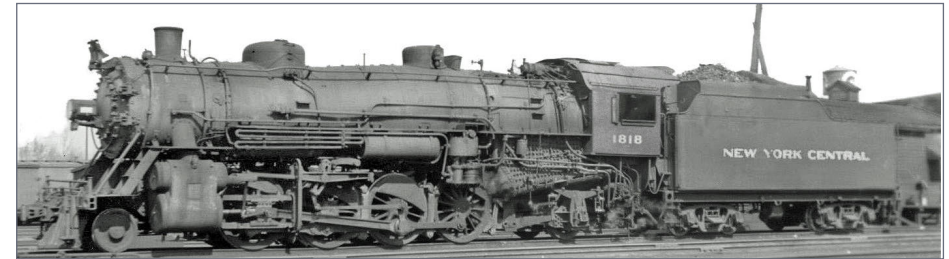


Railroad	Quantity	Class	Road numbers
New York Central Railroad	95	H-6a	5100–5194
New York Central subsidiary Cleveland, Cincinnati, Chicago and St. Louis	25	H-6a	6089–6113
New York Central subsidiary Indiana Harbor Belt Railroad	24	H-6a	400–423
New York Central subsidiary Lake Erie and Western Railroad	15	H-6a	5540–5554
New York Central subsidiary Michigan Central Railroad	20	H-6a	7970–7989
New York Central subsidiary Toledo and Ohio Central Railroad	15	H-6a	9732–9746

26. This chart shows the USRA light Mikes assigned to the various subsidiaries of the New York Central Lines.



27. NYC 5155 (as delivered) poses in this 1918 builder’s photo. This is one of my favorite locomotive photos. The 5155 has clean lines. It’s simple, functional, and soon to prove to be a truly successful design. The large U.S. on the tender indicates that the NYC (and all U.S. railroads) were under the control of the U.S. government and the USRA at that time.

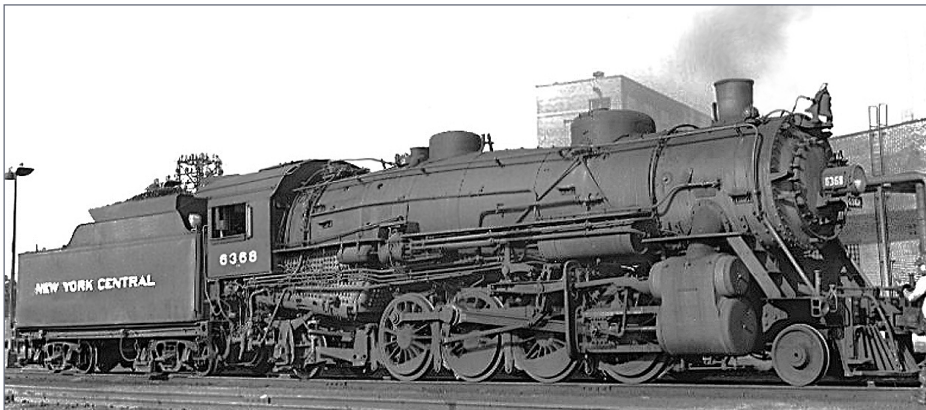


28. Location is Montreal, Quebec, Canada in April of 1946. At this late date NYC 1818 remained in near as-built configuration. One noteworthy exception is the extended coal bunker of the tender. Note the cow catcher front pilot. I love the traditional “rods down” pose of the locomotive.





29. CCC&StL 6106 appears unchanged in this post-1936 photo. The lettering remains the standard NYC Lines Roman typeface, but NYC Lines is no more. Note the foot board front pilot. In 1936 the NYC Lines was reorganized to become the NYC System. This locomotive has yet to be re-lettered in the new typeface and NEW YORK CENTRAL SYSTEM name. While the railroad remained one of America's "great" railroads for another 15 or 20 years, it was a slow downhill slide from that point on.



30. NYC 6368 as it appeared post-World War II. The giveaway to this time is the style of extended coal bunker, which was a latter-day addition. There is also a train control pickup shoe on the trailing axle of the tender's lead truck. This allowed the locomotive to work the mainlines that had cab signal control. Note the cow catcher front pilot. Ray Breyer collection

PENNSYLVANIA RAILROAD (PRR) 20006-20038

While the New York Central had the most USRA Mikes, the Pennsylvania had among the fewest. Pointed out earlier, the PRR viewed the USRA locomotives to be a NYC design, and as such wanted little to do with them. In 1919 while the railroad was still under USRA control, 33 USRA Mikados were assigned to the PRR along with seven more to subsidiary GR&I (GR&I 106-112 and PRR 20006-20038).

After the railroads were removed from USRA control, most Pennsy USRA Mikes (20006-20038) were sold in 1923 to the Frisco (SLSF) and Missouri Pacific (MP). Five were retained to run on the Grand Rapids & Indiana, and renumbered in 1921 to PRR 9627-9631. Those five locomotives lasted until retirement between March and November of 1948.

The Pennsy's USRA Mikes were very "clean," with few changes over their careers on the PRR. The one noticeable difference from the NYC and most other USRA Mikes was the high-mounted headlight at the top of the smokebox front, with the generator mounted immediately behind it on the smokebox. The pilots were the simple foot board type as the GR&I/PRR Mikes worked local freights doing plenty of switching.

For modeling, you have to model from 1919 to 1923 if you are to have any true PRR USRA Mikes. Otherwise, you need to model the GR&I Mikes (9627-9631), which were lettered PENNSYLVANIA, and not GR&I. While these locos worked the GR&I between Ft. Wayne, Indiana and Mackinaw City, Michigan for most of their time in service, in later years they wandered as far as Cincinnati.

You can buy a Trix Mikado lettered for the PRR. It has the high-mounted headlight matching PRR/GR&I practices. Add some weathering and you are in business





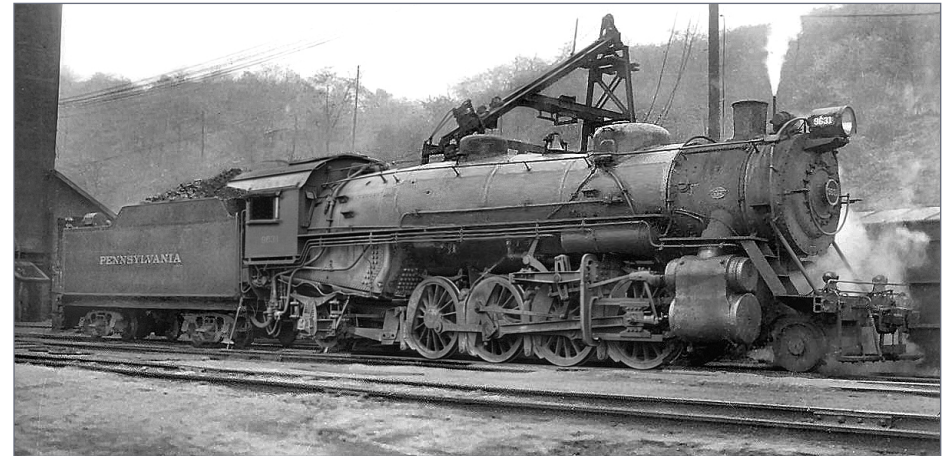
31. PRR 9630 is a very standard USRA Mikado. The only real difference between this locomotive and a NYC Lines USRA Mikado was the location of the headlight and generator. That “killed” Pennsy management, and they got rid of all but five of their USRA Mikes as soon as they could because of that! The five that were not sold worked the GR&I, but wandered south to Cincinnati in later years.



32. No. This is not a pair of PRR USRA Mikes. The 9629 up front is a USRA Mike, but the other locomotive is an H10 Consolidation. The H10 was the most common locomotive to work the GR&I by 1920, lasting there until the 1950s. *Ray Breyer collection*



33. PRR/GR&I 9630 in action. This fireman's-side view shows two small air tanks, and a compound air pump hanging above the drivers. A polished brass bell is top-center on the boiler. Per PRR practices, the headlight is located atop the smokebox front, with the steam electrical generator just behind it. Being that these five locomotives primarily worked the GR&L lines in Michigan, they did a lot of freight service that included plenty of switching. That's why the foot-board front pilot instead of a cow catcher.



34. PRR 9631 is another GR&I USRA Mike, and is identical to the 9630 and the other three USRA Mikes assigned to Pennsy's GR&I line that ran from Ft. Wayne to Mackinaw City. The five served the railroad well until retirement about 1950.

PITTSBURGH & WEST VIRGINIA (P&WV) 1000-1002

The P&WV had only three USRA Mikados, but then, the P&WV was a small railroad operating between Pittsburgh and the Ohio River. Modeling one of their USRA Mikes means replacing and raising the headlight. Add that large plumbing pipe, paint and letter the model, and add some weathering.



35. As with other railroads, post-WWII P&WV 1001 has an extended coal bunker for added capacity. The headlight is raised above the center of the smokebox, giving the front of the locomotive a different look from other railroads. There is some added plumbing on this side of the locomotive.



36. Here's the fireman's side of P&WV 1001 taken in June 1949. Note the logo on the tender side. Note that the coal bunker has been extended very professionally.

PIERRE MARQUETTE (PM) 1011-1040

The Pierre Marquette blanketed the state of Michigan, with extensions to Chicago, Toledo, and across southern Ontario, Canada to Buffalo, New York. There were 30 USRA light Mikes on the PM. The locomotives were nearly perfect for PM's needs.

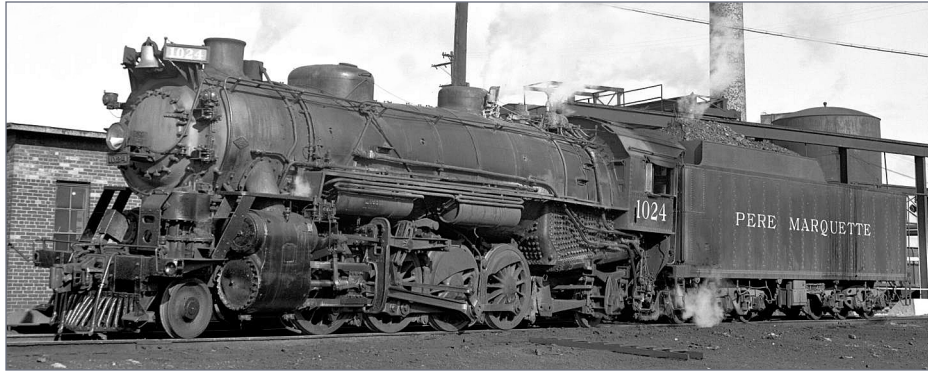
Starting in the late 1910s, the Van Sweringens acquired control of the PM, along with the C&O and the NKP railroads. As a result, PM locomotives developed with similar specs to those of the Nickle Plate and to an extent, Chesapeake & Ohio. The locomotives with shared designs and many of the same features.

Modeling the Pierre Marquette's steam locomotives is pretty simple. Simply tweak a NKP model, add paint and lettering, and you are in business.



37. PM 1012 is a standard configuration USRA Mike without modifications. It still retains the USRA tender in this photo. "Very standard" describes this locomotive. Ray Breyer collection





38. PM 1024 is seen here circa 1950. A much larger tender, with added capacity for water and coal, has replaced the original USRA tender. It has six-wheel trucks to support the added load. The compound air pump has been relocated to the front pilot deck, fireman's side. The locomotive has NKP-like "flying" number boards, giving the 1024 a Nickel Plate-like look about it. The polished brass bell is a nice touch. *Ray Breyer collection*

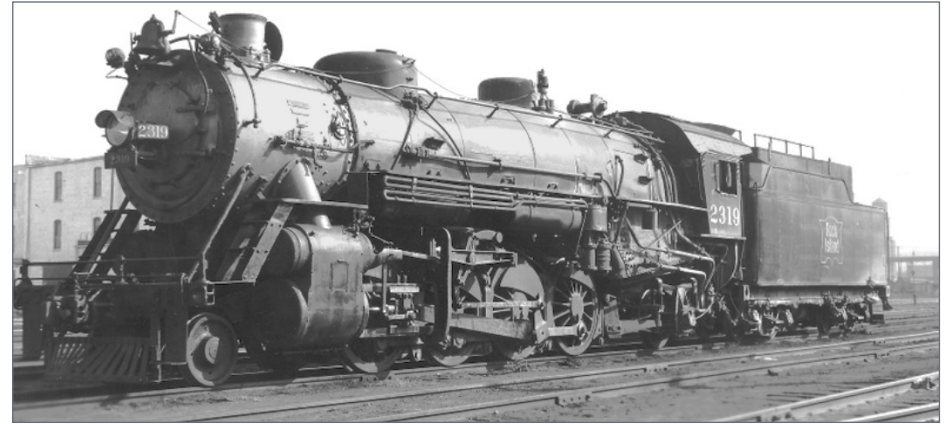
ROCK ISLAND (CRI&P) 2300-2309

The USRA assigned 20 light Mikado locomotives to the CRI&P during World War I, which the railroad classified as K-55. Baldwin built nine (2300-2308) and Alco built the other 11 (2309-2319). As with other railroad's USRA light Mikes, these mighty fine locomotives were modified over their service lives.



39. CRI&P 2308 is a typical USRA 2-8-2 except for that ugly tender. While many CRI&P USRA Mikes were fitted to burn oil (see tender of 2319). The tender above has a bulky water tank and a coal bunker. This locomotive and tender

would make a great modeling project. *Ray Breyer collection*



40. CRI&P 2319 is more typical of Rock Island USRA light Mikados. Note the oil bunker tender. *Ray Breyer collection*

RUTLAND RAILWAY 32-37

The Rutland had six USRA light Mikados. During the 1930s, the tender coal bunker was extended in height on the Rutland USRA Mikes. This seems to be typical of most railroads that had USRA light Mikes.

Any of the several USRA light Mikado models that are available will work. The bell should be moved a short distance to place it atop the smokebox. If you model after WWII, you should extend the tender coal bunker. Otherwise, paint, lettering, and weathering is all that is called for.





41. This is a good photo of Rutland 35 taken in Rutland Vermont in 1939.
Ray Breyer collection



42. Rutland 37 looks like any other railroad's USRA light Mike. All were built to the same USRA design and specifications. After the USRA lost control, individual railroads began to make changes to suit themselves.
Ray Breyer collection

SEABOARD AIR LINE (SAL) 490-499

The Seaboard's 10 USRA light Mikes did not change much over their long careers, aside from the additions of a large top shield to the headlight and awnings on either side of the cab. Even the tender remained standard USRA design. The only other real addition was dirt and grime!

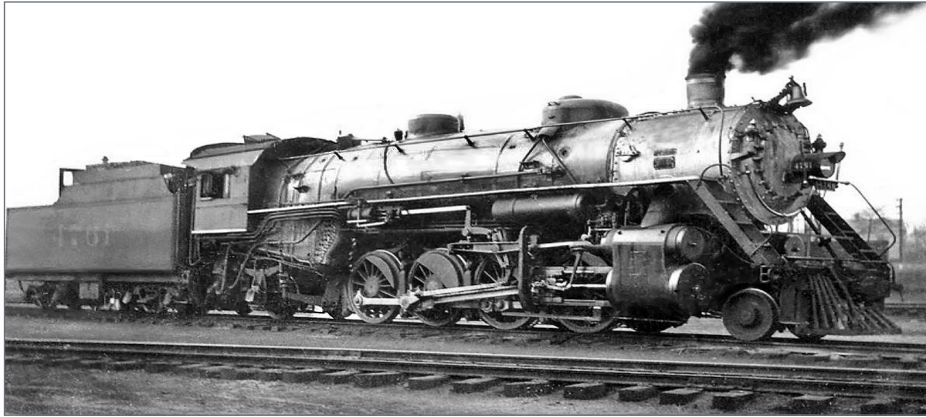


43. SAL 493 is shown ready to return to service on its next train. The locomotive has a cow catcher pilot with a small foot board at each side of the cow catcher. Plumbing from the sand dome has been re-installed in a slightly different arrangement. *Ray Breyer collection*

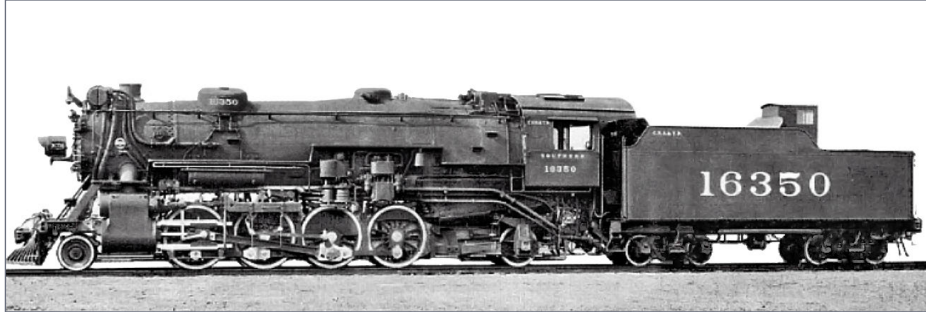
SOUTHERN (SOU) 4750-4774

The Southern Railway rostered 25 USRA light Mikados and a larger number of USRA heavy Mikado clones. These locomotives made up the bulk of the southern's fast-freight locomotives before and during the Second World War. The Southern's USRA Mikes and clones were retired and scrapped in 1954.





44. SOU 4701 is typical of the Southern's USRA light 2-8-2 locomotives. Note the nice big cow catcher. While I don't have a date or location for this photo, it is most likely post-Second World War, since it has the extended-height coal bunker.



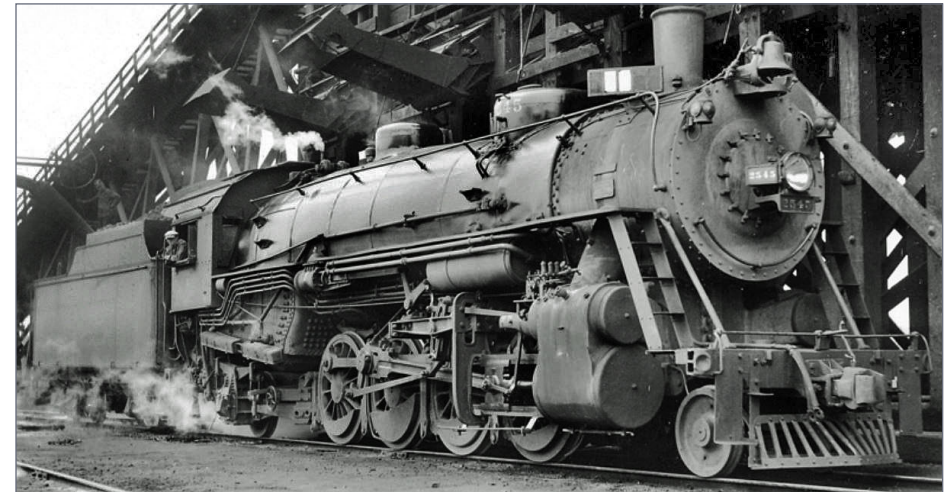
45. CNO&TP 16350 USRA 2-8-2 shown here with many upgrades. The five-digit numbers were short-lived. The CNO&TP was the Cincinnati New Orleans & Texas Pacific. These locomotives were USRA clones delivered to the various components of the Southern Railway in 1923, then again in 1928. Note the Elesco feedwater heater with associated plumbing and pumps. There is a doghouse atop the tender for the head-end brakeman to ride. There is a poling pole alongside the tender frame for switching. Note: I believe this locomotive was a USRA heavy Mikado clone.

UNION PACIFIC (UP) 2295-2314

The Union Pacific proper had 20 USRA light Mikados (2295-2314), and subsidiary Oregon Short Line had another 20 (2480-2499). While the UP light Mikes were standard issue, their smokestacks made them a bit of an odd duck. Most of the locomotives sported extend-height stacks, and some even sported stacks with an extra-large diameter.

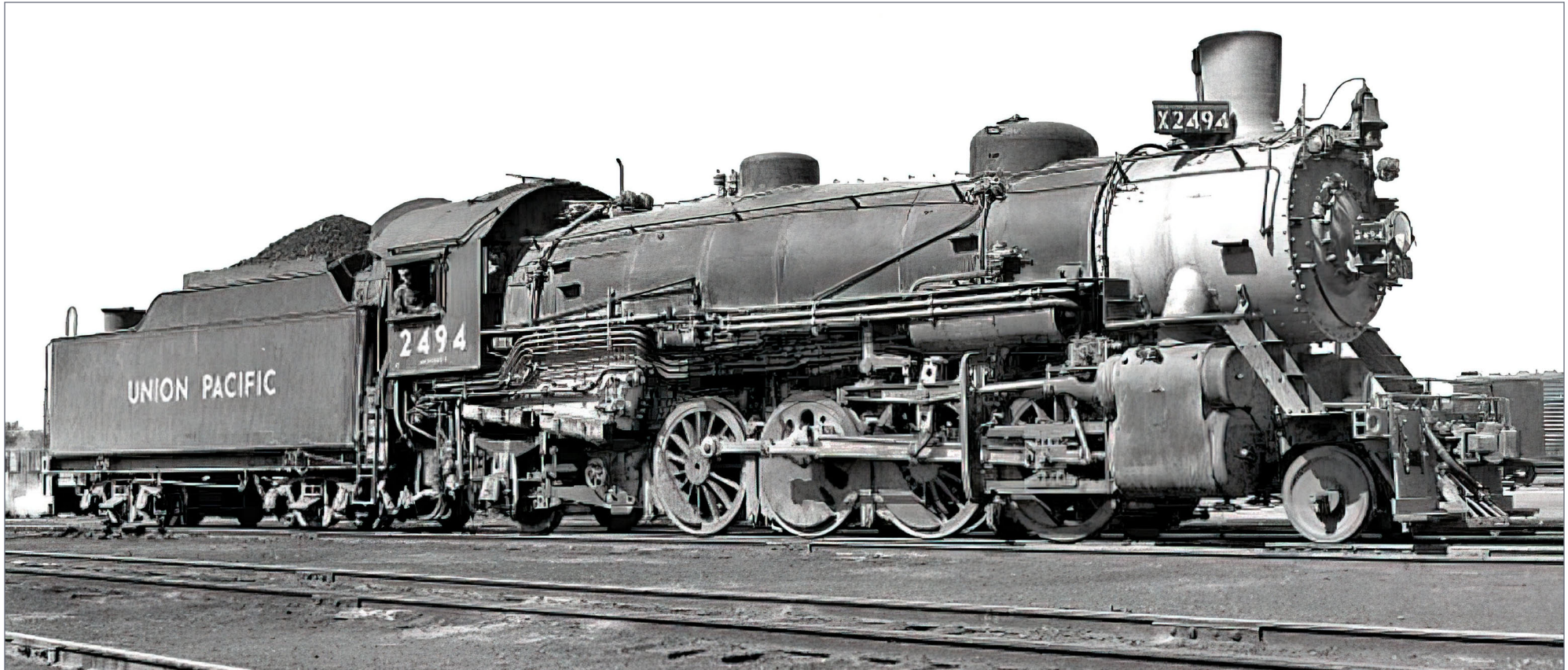
UP Mikes had number boards near the top of the smoke box on each side of the locomotive, flanking the smokestack. While other UP and other western railroads' steam locomotives were oil-fired, the UP's USRA Mikes were coal-fired.

Modeling UP USRA Mikes is pretty simple, but for the smokestacks. You will need to work on that a bit!



46. UP 2545 has been re-numbered from the original number series. Note the "tall" smokestack and the number board next to it. The cab is original USRA. The tender has an extended-height coal bunker.





WABASH (WAB) 2200-2219

The Wabash had 20 USRA light Mikados. Modifications came after the Second World War, including a raised headlight on the front of the smoke box, and increasing the height of the coal bunker on the tender.

If you are modeling a Wabash USRA Mike from before WWII, it is a simple matter of buying one of the available models – Broadway, Bachmann, or Trix – and painting and lettering it to match the Wabash. Modeling post-WWII means raising the headlight slightly and extending the coal bunker height – both simple matters.

47. UP 2494 was originally Oregon Short Line 2494. The cab has been changed to a UP-type cab, and look at the huge smokestack. Sure would make an interesting model! *Ray Breyer collection*



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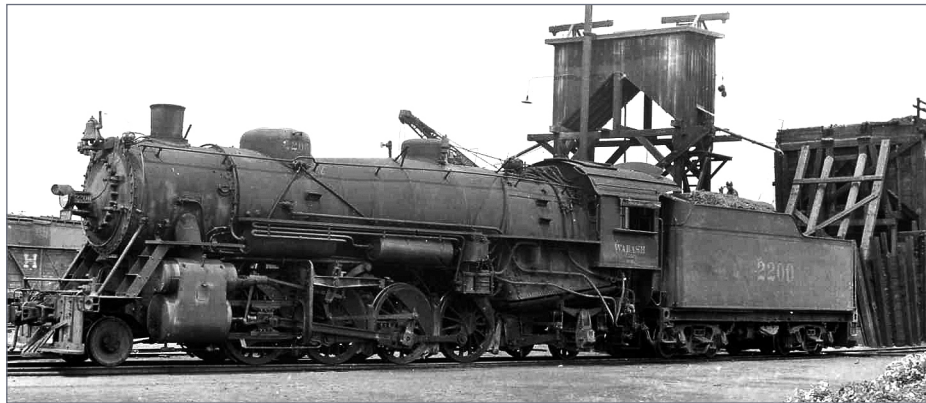
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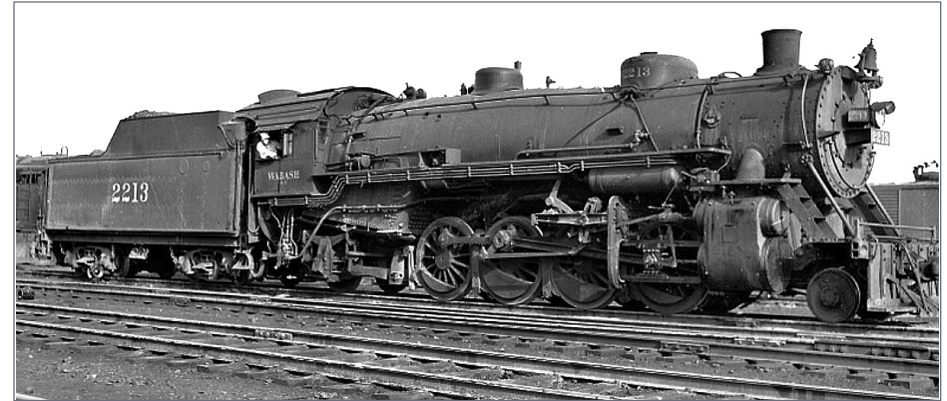
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48. WAB 2201 is working a winter day. This is a typical pre-WWII photo of a Wabash USRA light Mike. Note the foot-board pilot. The tender's coal bunker is not extended at the time. Extended coal bunkers typically happened after WWII. I can remember as young boy standing at trackside on such a day to watch passing trains. Steam locomotives put on a good show in the cold air.



49. This is the first in the class for Wabash USRA light Mikados. It is very standard. Note the foot board pilot vs. a cow catcher. Add lettering and weathering to your HO-scale USRA Mikado, and you are in business.
Ray Breyer collection



50. WAB 2213 has the raised headlight and extended coal bunker on the tender. Otherwise, this is a very standard USRA light Mikado.
Ray Breyer collection

★★★★★
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Running a Boxcar with the door open

MRH Running Extra | March 2021

STEPHEN KAY DETAILS A BOXCAR INTERIOR ...

WE ALL HAVE STARTED WHAT WE THOUGHT WAS A SIMPLE project, only to have it grow in complexity. When I saw a boxcar interior detail kit on eBay, it sparked an idea. I could install the kit, leave the car's doors open, and park the car at the dock at a factory on my layout.



Of course, it didn't turn out that way.

I bought a Red Caboose boxcar interior, designed for their 1937 AAR boxcar kit. I had a Southern Pacific kit in my stash so I was ready to go.

The interior kit comes with laser-cut wood parts for the boxcar floor and walls. These parts are peel-and-stick to simplify installation. My kit also came with a replacement wooden roof walk.

The Red Caboose interior kits are no longer in production, but B.T.S. produces a similar product for various Red Caboose models. Check their website at: www.btsrr.com/btsdet01.htm. Intermountain now manufactures the Red Caboose cars themselves.

Adding the wooden floor would raise the floor to an incorrect height. The edge of the floor would surely be conspicuous when viewed through the door opening.

The floor ran the full length of the car. With the doors open, where would I hide the weight? I wanted the boxcar to operate well, which meant it had to meet my layout standards, including proper couplers, metal wheels, and sufficient weight.

GIVING THE DOOR A TEXTURED BACKSIDE

I wanted to have only one door open, but the other door presented a problem. Prototype boxcar doors are pressed metal, textured on both sides.

The model's doors are plastic castings. Their outside is well-detailed, but they are totally flat on the inside. As long as both doors are closed or both open, this lack of texture is hidden, but if only one door is open, there is a problem!

My first idea was to see if a door with detail on both sides is available. I knew of some old kits that had stamped metal doors, but I wasn't sure how the outside of the door would measure up

A BOXCAR WITH THE DOOR OPEN | 3

to current standards or if they would even fit my kit. I also didn't like the idea of buying a vintage kit, using one door, and scrapping the rest.

Another option was to build my own stamped metal door. I tried pressing some heavy-duty aluminum foil onto the kit door, but that didn't work. I couldn't get the foil into the door's indentations well enough for the foil to pick up the detail I needed.

My next idea was to make a casting of the inside of the door. I found a door in my stash that was similar to the kit door and removed the latch details, since they would not be seen inside the door.



1. The kit door is in place on the right. The door to the left is a reasonable match that I found in my scrap box. I carved off the latch and roller details.

A BOXCAR WITH THE DOOR OPEN | 4

To make this casting, I attached the door to a piece of styrene with a drop or two of white glue. White glue does not stick well to plastic, and that is the idea. It would hold the door steady for the casting, but would allow easy removal afterward.

After the white glue drops were dry, I was ready to make the casting. I carefully squeezed the Elmer's School glue into each groove of the door, being careful to fill the grooves, but not go onto the frame of the door. The key was to remember that the interior casting had to be smaller than the overall door in order to fit the opening [2, 3].



2. I filled the grooves in the door but avoided getting glue onto the frame. The grooves are about the right width to fit in the door opening.



3. With the glue applied, I set the door aside to dry.



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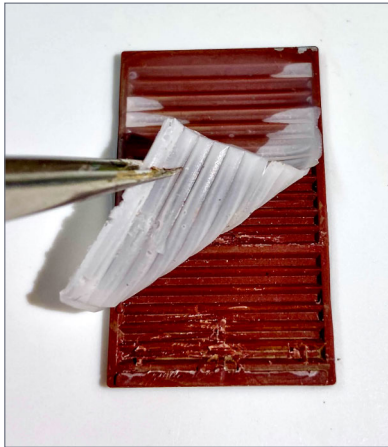
When the glue was dry, I lifted a corner of the casting with the tip of my modeling knife, then peeled the glue off with tweezers. [4] I was careful to keep track of which was the top of the “casting.” The result is a very thin, flexible sheet with the door details on it [5].

I trimmed the casting slightly smaller than the door opening. The dried casting was easy to trim.

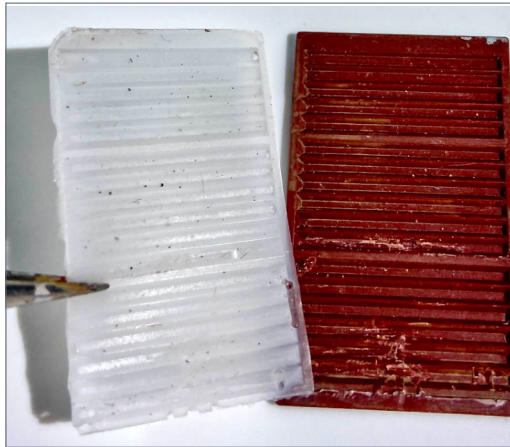
The next step was to paint the casting. I was not sure what color the inside of the door would have been, but I believed the most likely candidate was unpainted galvanized metal. I decided to go with Floquil Old Silver.

First, I painted the inside of the kit door. I kept to the edges of the door and avoided painting the center so the adhesive for the casting would have a better hold. I also painted the casting [6].

When the paint was dry, I mounted the kit door in the usual way and waited for the cement to dry completely. Then I attached the

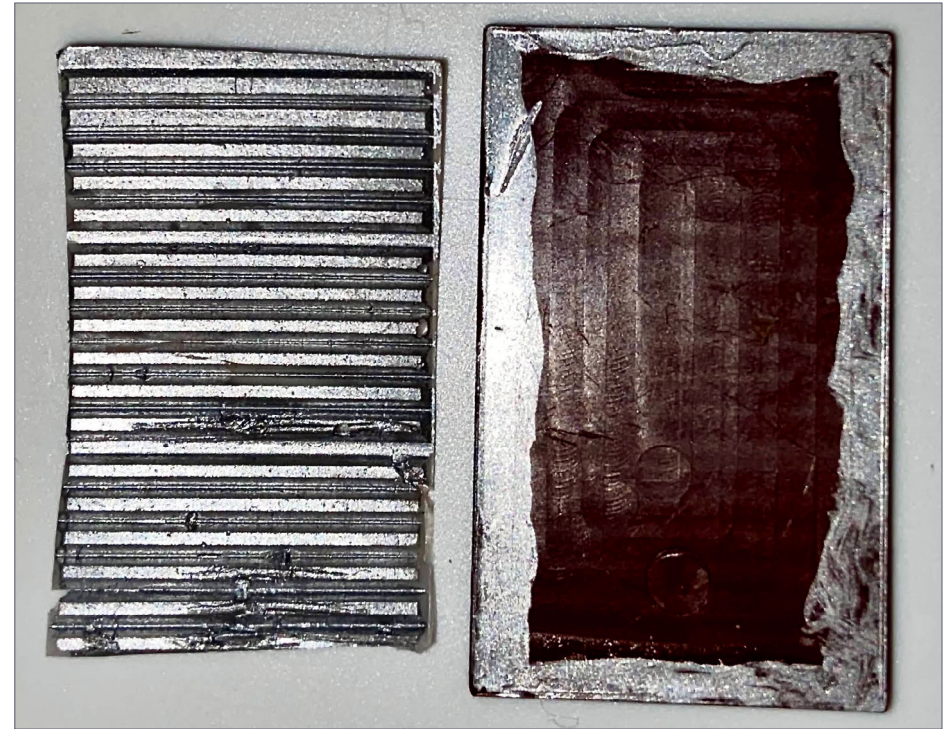


4. I carefully peeled the dried glue from the door using tweezers.



5. The final casting.

A BOXCAR WITH THE DOOR OPEN | 6



6. I painted the casting and the edges of the kit door's interior side in Floquil Old Silver. I double-checked that the casting fit in the door opening before moving on.

casting to the door with CA. I double-checked to make sure it was right-side-up and that all edges were firmly attached.

HIDING THE WEIGHT

I wanted to display the inside of the car, but I didn't want to reveal the weights. Standard weighting methods would be visible, so I had to find something else. I turned to a technique I usually use for covered hoppers: steel shot.

To do this in a boxcar, I built bulkheads out of .060" styrene. I measured them to the precise width of the car, and made sure



A BOXCAR WITH THE DOOR OPEN | 7

the tops of the bulkheads would not interfere with the roof. I mounted the bulkheads securely about ¼" from either end of the car using liquid styrene cement.

When the cement was completely dry, I painted the bulkheads boxcar red. I used paint that was on hand; no need for an exact match.

I weighed the partially assembled car and the remaining parts, then calculated the additional weight to bring the car up to standard. I weighed the shot and put half in each bunker.



7. The bulkhead and shot installed on one end of the boxcar interior. I trimmed the top corners of the bulkhead so it does not interfere with the roof.



8. I kept the boxcar's original molded floor painted tan, then weathered. Note the notches in the bulkheads to fit the roof.

A BOXCAR WITH THE DOOR OPEN | 8

I secured the pellets with CA adhesive. I laid down CA, then some shot, and continued in alternating layers. I set the car aside to allow the CA to cure completely.

For added security, I squirted some white glue into each cavity [7].

DETAILING THE INTERIOR

With the car weighted, I moved on to interior details. I used the boxcar's stock molded floor, rather than the replacement floor from the interior detail kit. I painted the floor with Tamiya Deck Tan, and lightly weathered it with dark gray and brown chalks [8].

I had to trim the wooden siding parts from the detail kit to accommodate the bulkheads I installed. I did this by test-fitting each part, and trimming as needed, marking each piece to designate its top and its location.

I lightly taped each trimmed part in place with the trimmed edges toward the bulkhead ends of the car, where they would be less visible, and test-fit the roof. Once I was certain that everything



9. With the walls installed, the interior detailing kit was complete. The boxcar was ready for final assembly and service.



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was a good fit, I peeled the backing off the wall parts and stuck them in their proper locations [9].

For a little interest, I built a few cardboard boxes from Nick and Nora Designs (nickandnoradesigns.com/shop/ols/products/cardboard-box). I built them flattened, and secured them to the inside of the car with double-sided tape. With that, all that remained was to complete the boxcar kit assembly and give it a little weathering before putting it on the rails [10]. ☒

10. A simply made casting makes the interior of this boxcar stand out.



STEPHEN KAY



Steve became interested in model railroading in 4th grade, when he borrowed a copy of *Making and Operating Model Railroads* by Raymond Yates, from the library at Oakville Elementary in Mayfield Heights, Ohio. After constructing several 4x8 layouts, he has built a number of larger railroads. He just started to dismantle his 21' x 11' HO Union Pacific layout in preparation for his next railroad—a 1950s-era shelf layout with plenty of structures.

When he is not building models, Steve is a docent at the Cleveland Museum of Natural History. He also has acted in over 40 plays, and directed a few as well at local theaters. ■



Replicating modern railcar tagging



NICK CAMPBELL SHOWS HOW TO
REPLICATE GRAFFITI FOR A PHOTO-
REALISTIC FINISH ...



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MRH Running Extra | March 2021

IN THIS ARTICLE, I share how I apply graffiti to model trains for photo realism. I use a technique adapted from that used by Gary Christensen. Gary uses inexpensive acrylic craft paints for outstanding replication in HO scale.

I found www.rpicturearchives.net most useful for finding prototype photos. While I was unable to secure permission to use any of the photos here, I would definitely recommend this resource for your projects. Using its search function, I was able to find several pictures of ARMN 110133 to help me with my project.

My first step is to wash the model a thoroughly with mild dish soap and a soft brush. I let it dry thoroughly. From this point forward, I only handle the model with latex gloves until after applying its final seal coat.

Once the model is dry, I spray the model with Testor's Dullcote to give it surface tooth. If you have already started weathering the model (as I did with this ARMN reefer) you should complete that weathering as much as possible at this time and apply another dull coat to seal in your weathering [1].

Using a pencil, I lightly draw the main outlines of the graffiti onto the model's surface. At this point you can erase and re-draw the lines as much as needed to get the shapes/ placements correct. The Dullcote seal should protect your weathering work[2].



1. I weathered the car and sealed it with Dullcote before applying graffiti.



2. I penciled outlines for the graffiti onto the car. Using a pencil makes erasing and modifying the outlines easy.



N. Campbell

LAYING DOWN THE BASE

If the model is not white, I give the graffiti area a whitewash using white acrylic craft paint thinned to the consistency of skim milk to give the graffiti colors a neutral base. I do not go completely opaque with this.

Whitewashing the graffiti area can obscure the pencil outlines sometimes, so you may need to go over some of those lines afterwards. My model is white already, so I did not need to go through that part of the process.

Once everything is penciled-in as I want it, the next step is to paint the black borders, outlines, and details of the graffiti. I use cheap black acrylic paint, thinned with water to the consistency of skim milk. I work in layers, reapplying the black paint until it has the darkness and opacity I am after [3].

Don't worry if you can't keep the paint perfectly within the lines. Some of this is going to be covered up later with other colors, and I frequently use subsequent layers to help sharpen points or thin lines in the graffiti. If nothing else, you can use a sharpened toothpick dipped in water to gently erase errant black paint.



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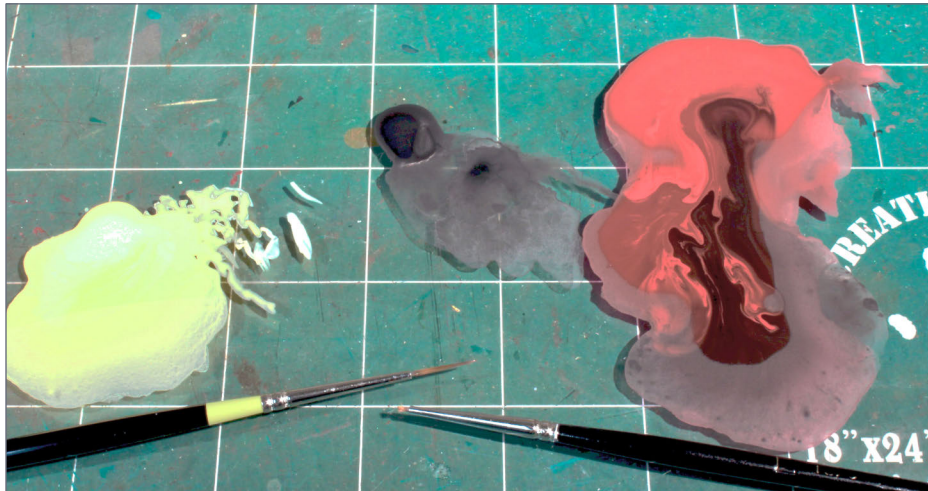
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REPLICATING MODERN RAILCAR TAGGING | 5



3. After three or four layers of black, I'm starting to get the shade and opacity I am after.



4. I thin and mix my paints on a sheet of glass. These ultra-thin paint brushes are handy for precise application.



5. The purple is translucent after the first application. Several more applications will build opacity.

REPLICATING MODERN RAILCAR TAGGING | 6

After the black has dried, I can start adding color. I continue to use the same inexpensive acrylic craft paints, thinned with tap water to that same skim milk consistency. I find a sheet of glass serves as a handy palate for thinning paints to the desired consistency and blending different colors [4].

Using thinned paint and working in layers is important to avoid the thick buildup of paint straight from the tube or bottle. Even a couple of layers of paint straight from the bottle can build up to a layer several scale inches thick, which will not look right close up or in photos. Prototypical graffiti, after all, has no noticeable thickness.

Working with one color at a time, I use very thin paint and work in layers to fill in the graffiti. The initial coat will look faint and transparent (5), but it will build up to a nice, opaque finish after about six applications, and I can move to the next color, pink (6).



6. Satisfied with the opacity of the purple after six layers, I moved on to filling in the pink. The first layer is complete.



7. Here is the car with all graffiti colors applied.

REPLICATING MODERN RAILCAR TAGGING | 7

I follow the same process of multiple thin layer applications for each color, moving to pink, then dark and light blue. The process requires some patience, but it is rewarding to watch the colors become bolder and more opaque with each progressive layer (7).

After painting the purples and blues, I decided they were too bold compared to the prototype photo, where they had already faded a bit. I thinned some white paint and added a few coats until it looked right. Ideally, I would have mixed the paint to the proper hues to begin with, but this technique saved me from having to start over [8].

When I had the bulk of the graffiti in the right hues, I could proceed with the white outlines and accents. Once again, I used multiple layers of thin white paint to achieve the desired results [9].

Continuing to work in layers, I added light green clouds with a darker green border. I created an over-spray effect for the dark green outline, using paint thinned almost to transparency that I applied using a damp-brush technique. This technique involves dipping the brush in the ultra-thin paint and touching it to a paper towel to wick off excess liquid before applying it to the model [9].



8. I faded the MENK [7] with a couple of washes of thinned white paint to match prototype. The benefits of working in multiple layers of ultra-thin paint are evident here. Even the smallest details on the car still show through the paint.

REPLICATING MODERN RAILCAR TAGGING | 8

Continuing with multiple layers and working with one color at a time, I filled in the detailing around the MENK with olive-green clouds. I added smaller tags to the car, too, complete with the over-spray effect. Re-blackening the outlines around MENK completed this phase and cleaned up any blunders [10].



9. I added white highlights to the MENK image, then surrounded it with light green clouds. Note the over-spray effect on the dark green outlines. I created this using a damp-brush technique.



10. With the addition of olive-green clouds, smaller tags, and re-blackened outlines, this project is really taking shape.



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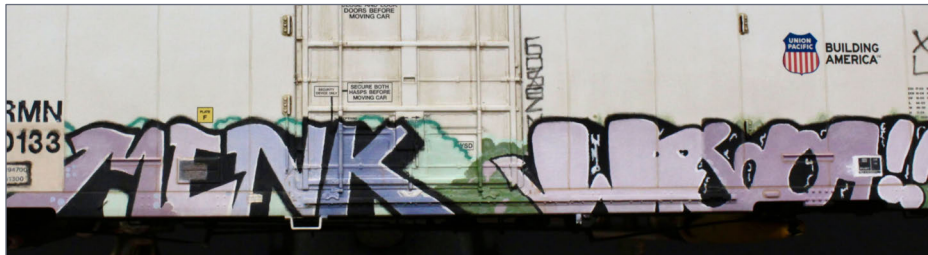
The black outlines needed an over-spray effect, too, though I used a different technique here. I prefer to use oils for black and white over-spray, because I feel oils look better for this technique than acrylic in most cases. I used a dry-brush technique for application.

For the dry-brushing, I dabbed a little paint onto a small piece of cardboard. I let it sit for five to ten minutes to allow the carrier oil to leach into the cardboard. I took a brush with a very small, close cut head and dipped it in the paint and brushed it almost dry onto a paper towel before applying it to the model [11].

I rubbed the paint onto the model carefully, working from the black acrylic paint outward. A Q-tip was helpful to feather the paint. I touched it to the model above the "over-spray" and slid it into the "over-spray."

The final step is to weather the fresh graffiti to blend it in with the rest of the car. I mixed up a blackish-brown wash and applied several coats. This made the graffiti appear dusty and road-worn, like the rest of the car [12].

With the first side completed and dried, I flipped the car over and worked on the opposite side, using the same techniques. After drawing the graffiti, coloring it in with many successive layers, over-spray effect, and weathering, that side, too was complete [13]. The beauty of this technique is that you can use it to create whatever graffiti you choose for photo-realistic results.



11. Dry-brushed oil paint fading to the black outlines really makes the MENK tag pop.



12. A coating of weathering solidifies the look.



13. I painted the opposite side of the car using the same techniques.

At this point, the boxcar sides were mostly finished. My last steps were to add reflective tape decals, followed by a final coat of Testor's Dullcote to seal the weathering and graffiti, and give the model a uniform finish. With weathering and a few more details, including an upgraded A/C unit and Sergeant couplers, the car was complete and ready for the rails [Cover, 14, 15]. ☑

See the final photos on the next page.





14. The completed MENK side of the car. Note the reflective tape decals. I took this photo on a diorama outdoors. The car looks like the real thing.



15. This ARMN reefer is ready to pull out of town with the next manifest freight.

Nick Campbell



As a young boy, there were many times that Nick would accompany his grandfather on errands. On occasion, he would see a train coming, and his Grandpa would pull his truck over to the side of the road. When the train roared by, shaking the truck, it always left an impression on Nick... as did the tuxedo scheme of the Southern Railroad.

Other seeds that were planted were the train sets he received as Christmas gifts from his father. After an absence from the hobby during his early adult life, he happened to stop in a hobby shop near where he was living, and the train bug bit again! He was hooked and a trickle of new models (rolling stock/engines) began to find their way to his home, and a layout was started.

During the layout-building phase, and a very regular internet search on model railroading questions, he stumbled upon the "The Weathering Shop" website. Being a visual artist (oils) already, seeing these models being transformed into miniature replicas of reality was fascinating to him. "The Weathering Shop" has a forum called "The Rustbucket." Just about every technique he has employed was found on "The Rustbucket." The tutorials and answers to questions about how to accomplish weathering goals have been invaluable.

What started as an art project has turned into prototype modeling. Nick hopes to continue to learn new techniques and produce more and more accurate models. ■



Fitting a freight house

MRH Running Extra | March 2021

CHRIS MONJE SELECTIVELY
COMPRESSES A FREIGHT HOUSE INTO A
LIMITED SPACE ...



ON A MODEL RAILROAD, it is good to have destinations for local freights to handle switching chores and keep customers happy. I knew of a freight house in Whitehall, New York, that once served the Delaware and Hudson Railway, and I thought a similar model would make a nice addition to my layout [1].

The freight house from Better Than Scratch's New River Yard series seemed to fit the bill (www.btsrr.com/bts7500.htm). Designed after a CB&Q prototype, the laser-cut wood kit has a

FITTING A FREIGHT HOUSE | 2

scale footprint of 74' x 20', with a 30' loading dock on one end. Though the structure in White Hall is brick, the BTS kit was similar enough to represent the structure on my S scale layout.

I wanted to place the structure on a siding between a roundhouse and a curve on the main line. I knew the freight house would need a straight track, but I did not have space for a straight track long enough to match the structure's length. I would have to compensate using selective compression.

Selective compression is a modeling trick to strategically reduce a structure's footprint to match an available space without losing the sense of scale. If done right, a compressed building will look appropriate next to other non-compressed elements, such as rolling stock and locomotives.



1. This structure in Whitehall, New York served the Delaware and Hudson Railway. The siding track is gone, and the present occupant is a tire dealer. However the sign remains, and the building's heritage is unmistakable.



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The first step was to outline the available footprint with tape. I temporarily taped the four structure walls together. Next I set it and the platform next to the taped footprint for comparison [2].

Selective compression requires a certain amount of planning, as some elements compress better than others. You can't compress doors or windows without losing scale, so it's better to remove them entirely if needed.

This BTS kit has vertical siding, with evenly spaced scoring to represent individual boards. Counting the boards provided an easy way to measure how much of the building to remove. I found I needed to remove seven from each side [3].

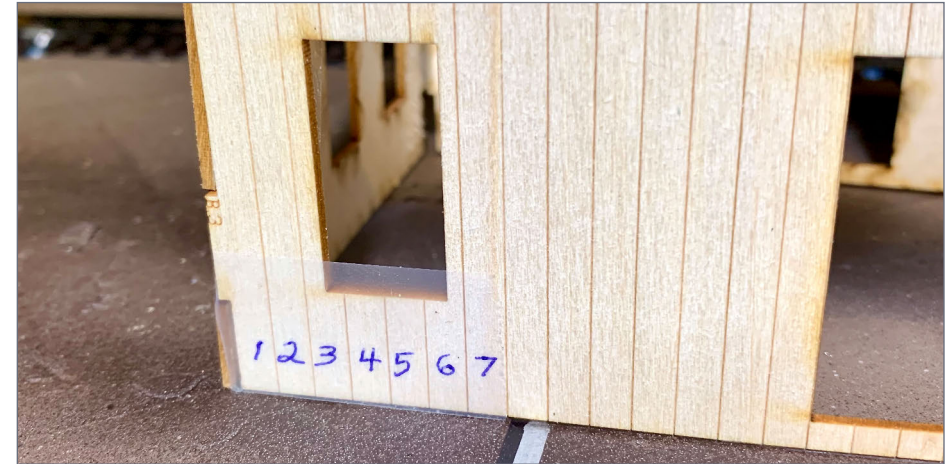
Next, I had to think about where to condense. I decided to reduce the office area on one side of the building. On the other side, I eliminated one freight door – which happened to be seven boards wide [4].



2. I used gray tape to outline the available space for the freight house. The boxcar on the left is on curved track, and the end of the track is on the right. Setting the structure itself next to the outline helped me visualize the compression I would need.

FITTING A FREIGHT HOUSE | 4

I used a square to assure straight right-angle cuts. A straight edge is indispensable for precise cuts, and I had to make two of them per side [5].



3. I counted seven boards for removal and wrote the numbers on tape as a visualization.



4. I counted boards to the right of the freight door for removal. The freight doors are seven boards wide.



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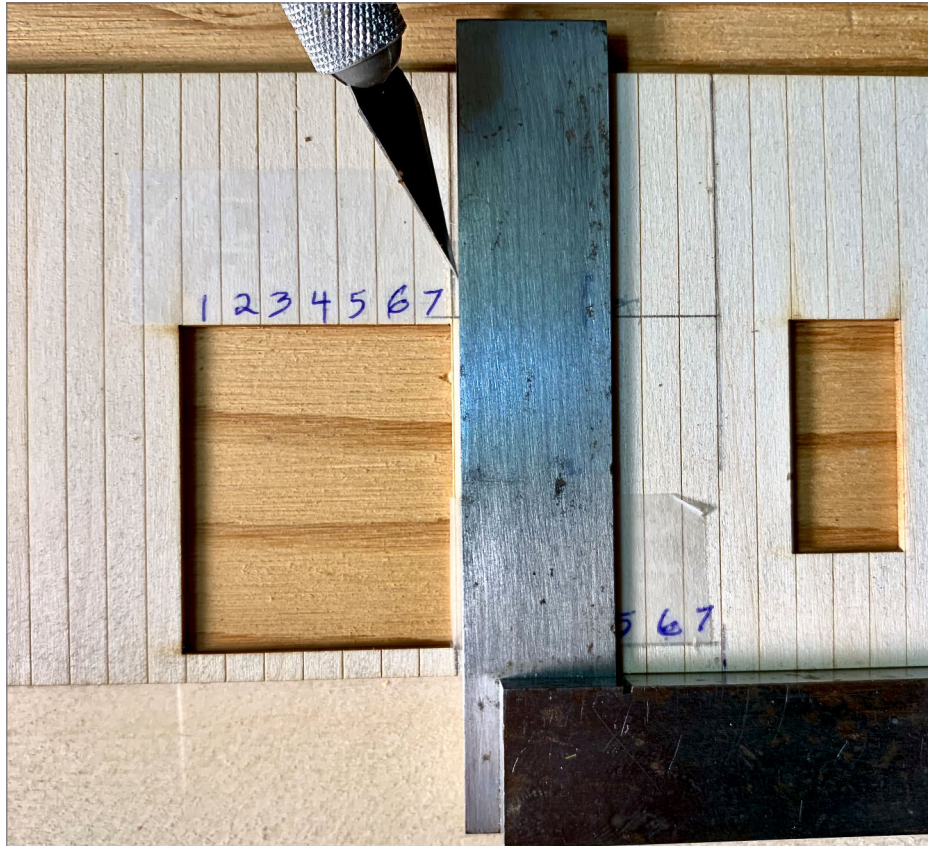
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With the seven board segments removed, I prepared to rejoin the two remaining wall segments. I used a sanding block to square the cut edges – crucial for a successful joint [6].

Once the edges were square, I placed the pieces on a flat surface, applied glue, and pressed them together. Yet another advantage of the vertical siding became evident here as the joint blended into the board lines of the siding [7].



5. Aligning the guide to make the first cut. I aligned everything with the edge of the cargo door for this one. The line for the second cut is to the right of the square.

FITTING A FREIGHT HOUSE | 6

On the other side of the building, I removed one of the cargo doors. Because the door was so close to the original joint line for the two halves of that side, I measured my cut from the joint line. This left



6. I glued sandpaper to a block of wood to square-up the edges to join. The segment of wall I removed is at the top of the photo.



7. I joined the pieces on a flat surface. The joint turned out pretty well.



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three boards of the old door, which I filled with scrap from removed wall sections [8].

With the walls shortened, I began reassembly. I glued two walls together at a time. The 10" Micro-Mark magnetic gluing jig squared the four walls properly [9].

Once the glue had dried on the two halves of the building, I glued them together. I used brass clamps to hold the structure in place as the glue dried [10].

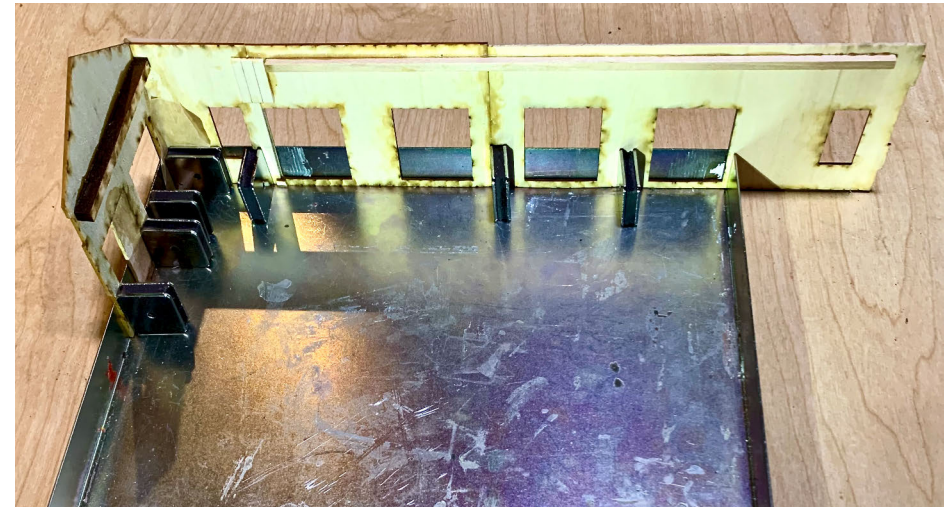
The siding looked all right as it was, but I decided to add battens not included with the kit. They add character to the building and further blend things in. It was tedious to keep the battens parallel while gluing, but trimming and sanding them was easy afterward [11].

After the glue dried, I gave the interior walls a coat of black paint. This made them opaque for interior lighting [12]. After the black dried, I followed-up with a coat of gray primer for the entire building [13].



8. I compressed and rejoined the two sides. Note the partially filled door opening on top.

FITTING A FREIGHT HOUSE | 8



9. I squared the structure using a 10" magnetic gluing jig from Micro-Mark. The jig has slots on the end to accommodate longer walls.



10. I glued the two building halves together with brass clamps. The waxed paper underneath the two corners prevents the structure gluing to my work surface.



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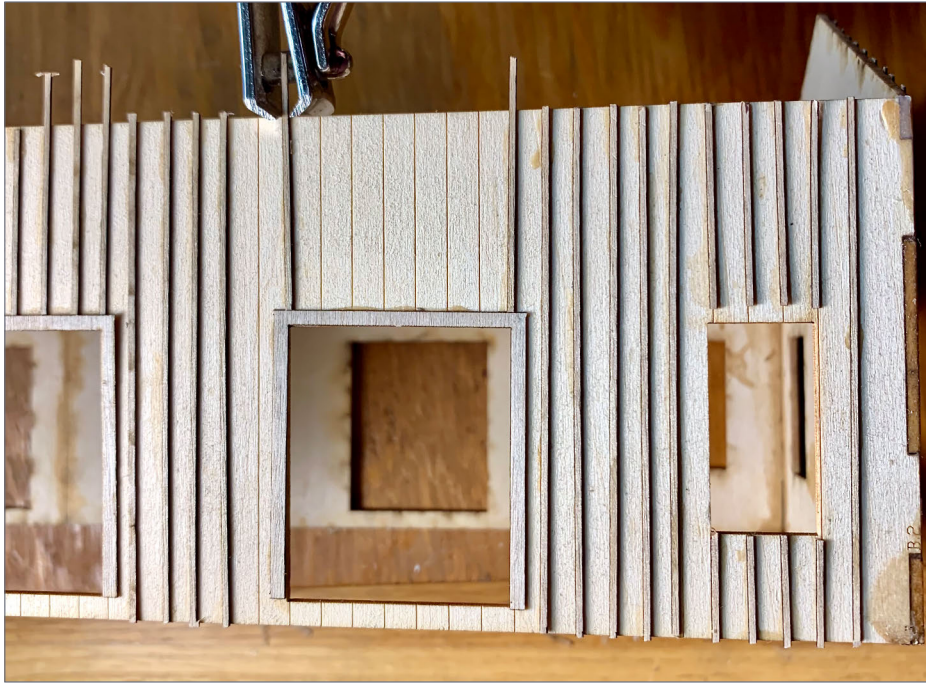
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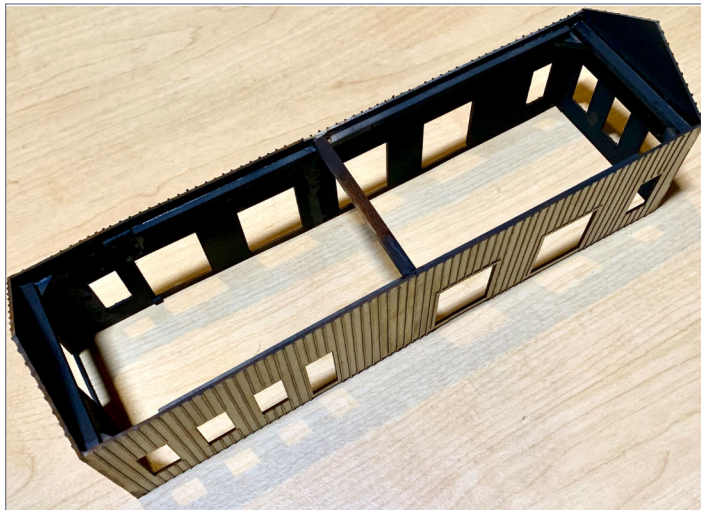
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11. It was a tedious process to keep the battens parallel while gluing, but I trimmed them easily with a nail clipper.

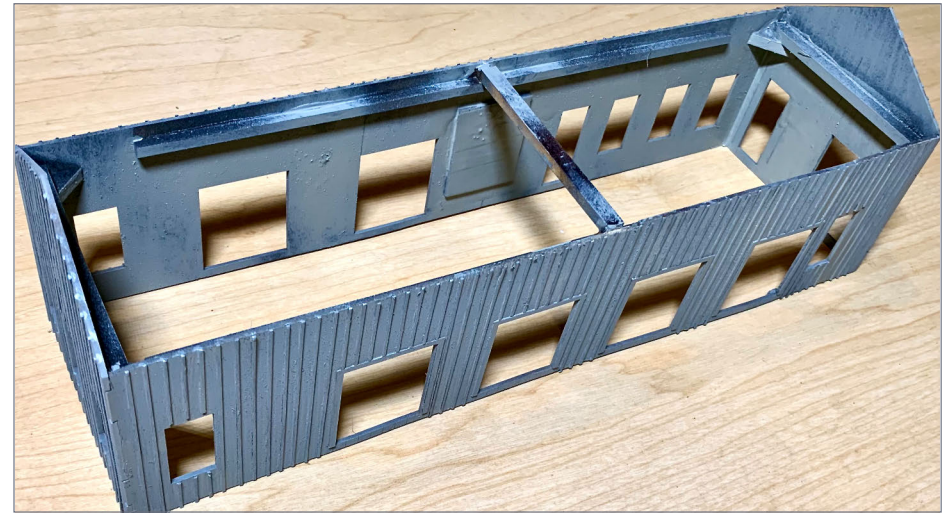


12. A coat of interior black prevents the walls from glowing with interior illumination.

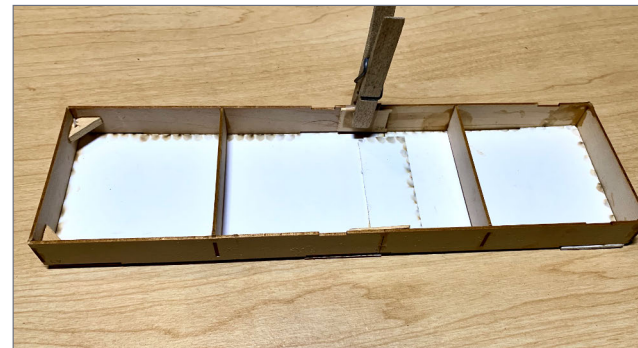
FITTING A FREIGHT HOUSE | 10

I set the main structure aside to work on the cardstock-and-wood base. I shortened the wooden sides, sanded the edges, and secured the splices with a clothespin to dry [14]. I sealed and weathered the floor with linseed oil, and brown shoe dye [15].

I cut one corner of the freight dock at a 45° angle. This allowed me to keep most of the dock's length, while still fitting the available space and allowing access for S scale delivery trucks to back in for loading [16].



13. Flat gray primer provides a neutral starting point.



14. I shortened the base and glued it together, holding the splice joints with a clothespin.



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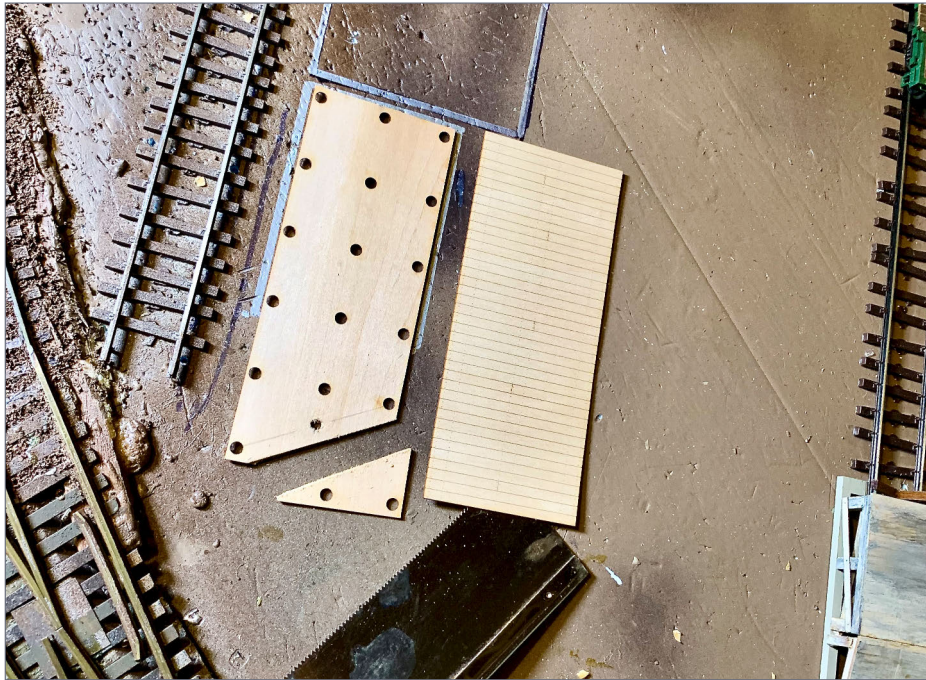
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15. I used linseed oil to weather the floor. Nitrile gloves will keep the oil off your hands.

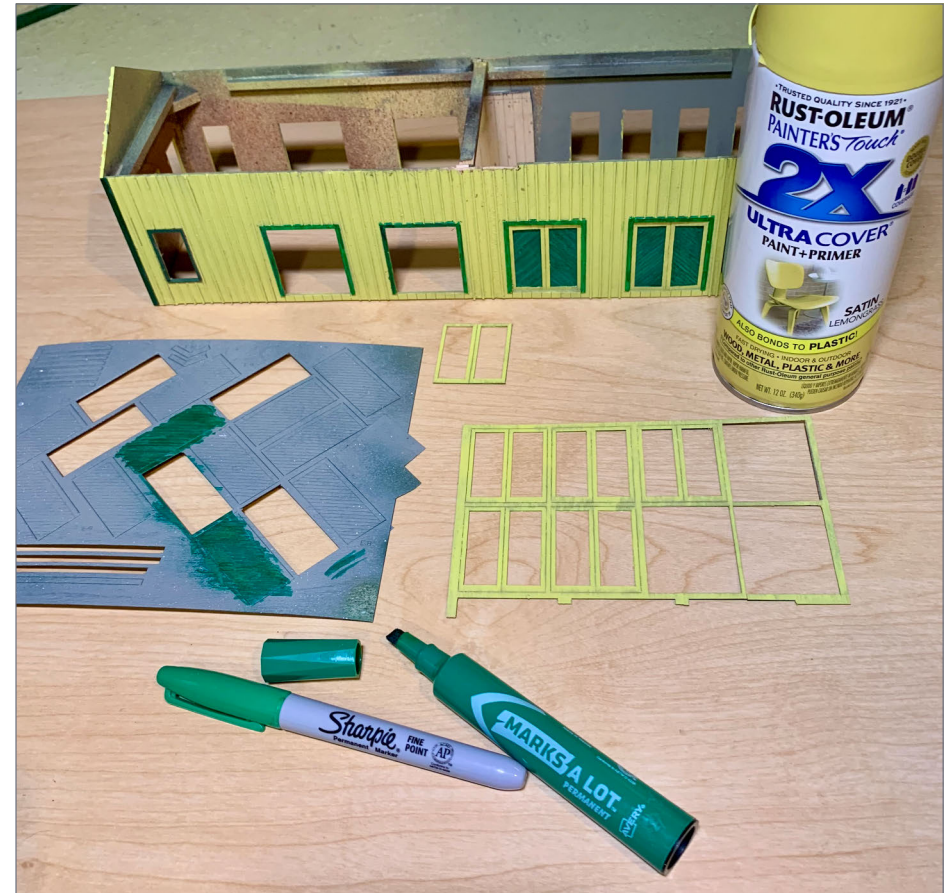


16. I cut the dock substrate at a 45° angle, with the laminate dock surface to follow. The team track and ramp are to the right.

FITTING A FREIGHT HOUSE | 12

With that, I gave the main structure a coat of Rust-Oleum satin lemon grass. I used green ink markers to highlight the door frames and boards [17].

To add interest, I lighted the freight house sign and the loading dock. I used self-adhesive 12-volt LED strips concealed underneath the roof and behind the sign. I glued the LEDs for added security [18, 19].



17. I spray-painted the structure, and accented the door frames and boards with green marker.



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I shingled the roof with self-adhesive shingle strips found at www.rail-scale-models.com and weathered with a mixture of India ink and alcohol. With that, the freight house was complete [20]. ☑



18. I attached the LEDs to the underside of the roof and sign. I made them pluggable to allow removing the roof.



19. The LEDs aren't visible, but their illumination is attractive.



FITTING A FREIGHT HOUSE | 14



20. The freight house from the street side

CHRIS MONJE



Department store Christmas displays in the 1950s sparked Chris' train fascination. The Hall of Science layout in New York was also a favorite. In 1970, Chris worked for New Jersey's Black River & Western on the track crew, and as a fireman.

Now he is a member of the North Western Vermont HO model railroad club. Members have operating sessions on a permanent layout, and operate club modules in venues like the annual March train show. www.nwvrailroad.org. ■



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AK WEATHERING PENCILS



MRH Running Extra | February 2021

JEFF PALMER TESTS A NEW TAKE ON
A COMMON TOOL ...



A FEW MONTHS BACK, I got an announcement from AK Interactive about a new product AK Weathering Pencils For Modeling. I had been using Prismacolor Pencils to add highlights to models, but I did not use them for weathering for the most part. Chalks, stains, pastels, and other powders are my mainstays for weathering, but my interest was piqued.

That changed when one of my mentors got a set of AK Pencils and began telling me about his experience with them. Fascinated, I broke down and bought a set. I found the best price, shipping included, was to order directly from AK Interactive in Spain.

When the pencils arrived four days later, I could not help but notice the packaging. There are two foam cradles, each with 19

AK WEATHERING PENCILS | 2

pencil slots. The kit had 37 pencils in total, so there was one open slot, which I found handy for storing a blending brush [1]. This packaging holds each pencil snugly and keeps them well-protected, certainly better than the metal case and plastic liner method I have encountered more often. AK's packaging works well to avoid chipped heads, broken cores, and, most importantly, color cross-contamination I have observed with other pencils.

AK uses a "semi-grease" formula for its pencil lead, which would theoretically make them well-suited for writing on glass, ceramic, porcelain, or other smooth surfaces, including castings. I tested the AK pencils and those of a few other brands on a saucer I grabbed from the kitchen. Compared to Faber-Castell, Prismacolor, or Derwent, AK was the only one that would write on a saucer dry, though all worked when wet [2].

Using the pencils dry is similar to using chalks, though the pencils allow much finer lines, which opens up a realm of possibilities. You can draw lines to represent scratches and gouges, early beginnings of paint cracks, rust lines, steam and water seepage around water lines and steam fittings, oil and grease seepage. The possibilities are endless.



1a, 1b. AK Interactive's packaging uses foam to provide a snug, secure housing for the weathering pencils.



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Speaking of rust, the kit includes three colors of it. Dark Rust (10013), Medium Rust (10012), and Light Rust (10011) create a nice variety of rust colors to begin with. Throw in some Strong Ocher (10014) and Yellow (10032), and you can rust just about anything made of iron convincingly [3].

While ready to use out of the box, I found that my AK pencils did not have sharp points. Sharpening the pencils produced noticeably finer lines [4]. Find a pencil sharpener that works for you to keep the pencils sharp and working their best.

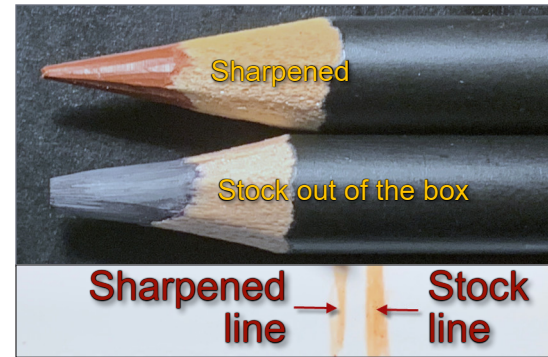


2. The grease blend of the AK pencils' lead allowed them to write well on the saucer's smooth surface.



3. The AK set includes three colors of rust and enough complementary colors to blend into a convincing rust job.

AK WEATHERING PENCILS | 4



4. Here is a comparison between a freshly sharpened pencil (top) and a pencil straight out of the box (bottom). Note the difference in thickness between the stock and sharpened lines. I recommend sharpening the pencils before you get started with any projects.

The AK pencils work very well when dry for fine detailing. Their lead blend adheres well to smooth surfaces, though it does better if the surface has been primed. An added bonus is that you can undo goofs with an eraser, just as you would a regular pencil.

Blending your AK weathering project

Just as with pastels or powders, you can blend the colors from your AK weathering pencil using a brush, a makeup applicator, and as I often do, your finger. If you want to change the texture, add water sparingly. Damp will blend the colors, but too much water will wash them away.

To get a “damp” brush, touch the tip of your brush to water, then touch it to a paper towel to wick excess moisture. Remember, you are using the water to blend the effect you already created, not to wash it away. Use dry pencils for fine detailing.

AK weathering pencils are water-based, meaning that they are most effective when used with water. I’ve used various dry pencils in my projects for years, but mostly for adding fine



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5. AK weathering pencils behave much like other weathering media, and you can use the same tools for blending.

lines and interest (color variation that catches the eye). I've used white vinegar, acetone, and other solvents to soften the lead with varying success. For me, these pencils were more trouble than they were worth.

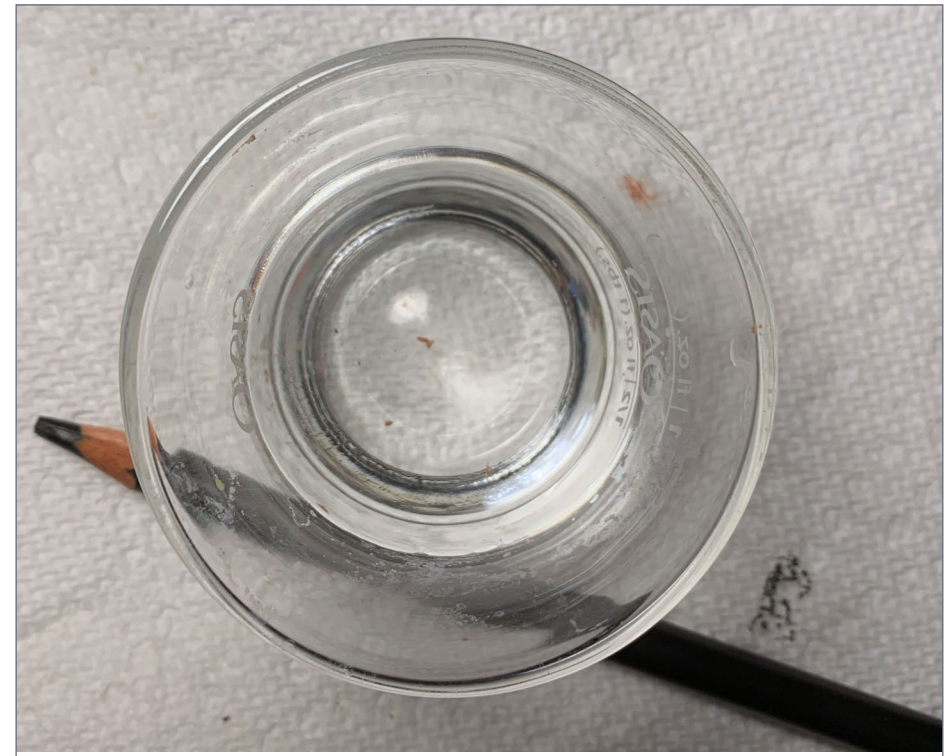
Then I discovered watercolor pencils. Other modelers have often cautioned to stay away from watercolors because their lines spread too much, they don't blend well, and they're too gummy. To some degree, I agreed with all of these statements. That was before AK arrived on the scene.

Basic watercolor pencil technique

The key to effectively using watercolor pencils is to go easy on the water. Dip the tip of the pencil in the water, give it a second to absorb and activate, and use it. I use a medicine cup that holds exactly one ounce of liquid with approximately 1/8" to 1/4" of tap water, just deep enough to get the tip wet [6].

If the area you are working on is already damp or wet, place the dry pencil to that spot and begin to blend it in. Only dip the tip of the pencil in water if the spot is too dry. You want the area where you are working to be damp, but too much water will flood the area and cause bleed.

Don't apply too much pressure to the pencil; light, gentle strokes over the area you are working will do. Even if the coloration is light at first, it will build up as you work. AK Interactive offers a video to demonstrate the product here: www.youtube.com/watch?v=5I3S4-aQPkY.



6. A medicine cup with only enough water to get the tip wet is plenty to activate a watercolor pencil.

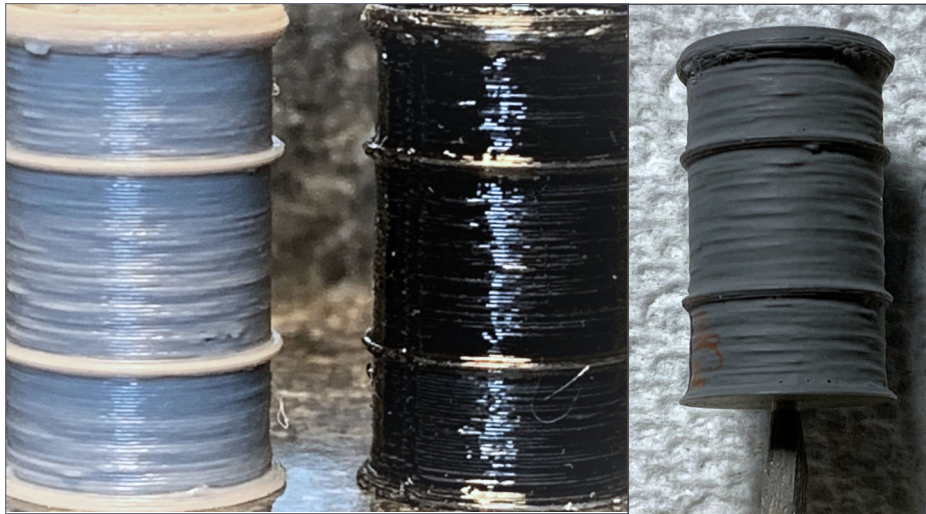


Testing AK pencils for painting barrels

One of the YouTubes demonstrates the complete weathering process for an oil barrel (www.youtube.com/watch?v=TJni95dRs24). I decided to weather a few of my own barrels to test the product myself.

I decided to test the AK weathering pencils on a few 3D-printed O scale barrels a friend who works as a sales rep for PolyPrinter gave me. These barrels are for scenic details, not foreground models, which means that I could apply the three-foot rule.

Because 3D printers print objects in layers, each successive layer leaves a line that interferes with painting [7]. To give the AK pencils a fair test, my first step was to dissolve the printing lines using Tamiya Extra Thin Cement, which is acetone-based.



7. Note the slicing lines on the 3D-printed barrel to the left. If these are not treated prior to painting, they will show through the paint (center). I used Tamiya Extra Thin Cement to soften the print lines before priming the barrel on the right.



8. The first test project for the AK pencils was to use them as paints to replicate a Sunoco barrel (left). The coverage of the yellow was a bit of a challenge (center), but with a few coats and a decal, the barrel was a decent background detail.

I brushed the cement onto the barrel in several coats until I obtained the smoothness I wanted, then primed it with Rust-Oleum Primer Gray [7].

For my first barrel, I decided to see if I could replicate a Sunoco barrel. The barrel has three color bands, blue-yellow-blue. This allowed me to paint using the pencils.

I grabbed the Dark Blue (10022) and Yellow (10032) and went to work. The dark blue covered the lower and upper thirds easily. The yellow did not do so well.

One of the challenges with water-based paints is that water reactivates the paint. I resolved this by spraying a fixative – I chose Krylon UV Protective Coating – to seal each successive coat. This allowed me to add more yellow without washing-out

the previous work, leaving me with a passable three-foot model [8].

Testing AK pencils for weathering

While my experiment with using the AK pencils for painting was not bad, I really use pencils for rusting, streaking, chipping, and other weathering effects. I took a couple of barrels I had prepared earlier and applied Dark Rust (100013) from the AK set to them. I took three more and applied Burnt Umber from each of three other pencil sets, one pencil set per barrel.

I followed the same procedure with the oranges, yellows, reds, and browns from the different pencil sets. Things went well for the most part. I found the AK Pencils were the most forgiving when it came to blending. They did not gum up, and were the most responsive to damp paper towels, sponges, and brushes [9].

One drawback to using pencils – of any brand – is that they leave a flat finish. Life is not flat. Some elements of old oil barrels require a bit more shine to represent spilled contents.

I used some enamels and oils on the barrels to bring out the shine. Nothing looks as grimy as oil Sepia thinned in mineral spirits. Mineral spirits and the other solvents in the oil paints and enamels did not seem to affect the watercolors [10].



9. Compare the barrel I rusted with Prismacolor pencil (left) and the one I did with the AK pencil. The AK allowed better coverage without lumps.

You can use acrylic paints, but be careful, as many acrylics are water-based. Water can reactivate watercolors. It may be wise to apply a sealer to the pencil work before proceeding with any acrylics.

The only thing I did not do was go back and add powders to the barrels to represent layers of texture – think dust, dirt, and rust. For example, there is always some dirt around the base and on the barrel ridges, or pastel rust on top and sides of the barrel. Neither rust nor dirt are flat paint; both have three dimensional texture that flat paint or pencils cannot quite replicate.

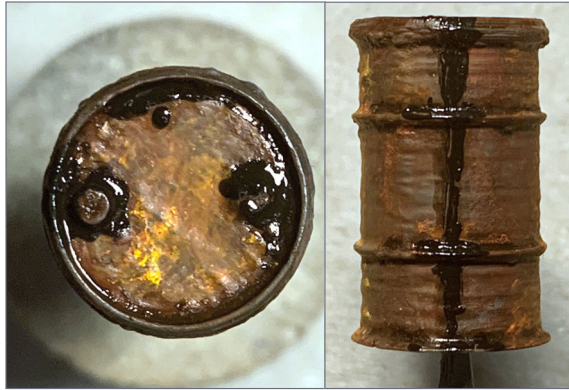
I've definitely added **AK Pencils** to my tool belt for detailing and weathering. AK made it easy for me by giving the colors names I can associate with, like Rubber (10002), Smoke (10003), Gun Metal (10018), Aluminum (10033), Copper (10037) and a host of other colors. This allowed me to use the pencils more like paints, and I liked that. AK Pencils were well worth the price. ☑

See further picture on following page ...



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10. I finished off the weathering effect with oil and enamel paint to represent oozing, spilled barrel contents. Pencils cannot replicate the gloss.



11, 12. The details weathered with the AK pencils fit right into my layout scenes. I like the control these pencils give me, letting me put just the right the amount of grime and rust on my layout details.

★★★★★
RATE THIS ARTICLE

JEFF PALMER



Until Jeff retired, he spent 50 years developing software, and 25 years as a college professor. During that time, as now, he was a modeler. He loves to build structures, bridges, scenery, and locos. More specifically, his interest is in logging and mining, which means that he likes narrow gauge. He enjoys the free form and ruggedness that surrounds logging and mining railroads, the scenery and landscape, and is always on the lookout for new techniques, and tools that improve the hobby. Model railroading allows him to expand his skill set, work with his hands, and share with his friends, the things he has learned.

About two years ago, he completed his MMR (Master Model Railroader) certificate from the NMRA. During that journey, he had the privilege of meeting many of the modelers he looked up to, like Gil Freitag, Duane Richardson, Chuck Ellis, George Sellios, Marc LaChey, Dave Revelia, Dave Frary, Scott Mason, and others. His goal is to be recognized in this group someday. ■

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We depend on word-of-mouth to grow ... if you don't share us, we don't grow



THE AH-HAH MOMENT

column



MRH Running Extra | March 2021

JOE FUGATE USE REAL STONE CHIPS TO
MODEL A MORE REALISTIC RIVERBOTTOM ...

★★★★★
RATE THIS ARTICLE

I'VE SEEN DISCUSSIONS ONLINE WHERE MODELERS TALK ABOUT using broken ceiling tiles to form scenery with sedimentary rock layers.

While that method works for a simple rock face such as a cut, what about modeling a riverbottom with exposed rock layers like the one shown in [1]? The broken ceiling tiles don't quite cut it here.

After looking around online, I discovered inexpensive aquarium / terrarium rocks such as flat flagstone chips in various colors [3, 4]. We used them to make the flat rock layers in the covered bridge scene on our TrainMasters TV project layout [2]. *Ah-hah!*

Nothing looks more like rock in your scenery than real rock! Once I found the aquarium/terrarium rocks and saw they're quite affordable, I realized we modelers have a small goldmine in realistic scenery rocks as close as a trip to *Petco* (as well as online)!

Isn't it funny that we modelers now will pay folks to ship us rocks? Shades of the *Pet Rock* craze from bygone years!

One thing to keep in mind: real rocks can get heavy, so do build some solid support into your benchwork in the areas where you're making the riverbed (or whatever). Fortunately, we're using fairly small rock chips of 1-5" that weigh maybe 5-10 pounds total. So they're not going to stress the benchwork that much. And as you can see, they look great! ☑

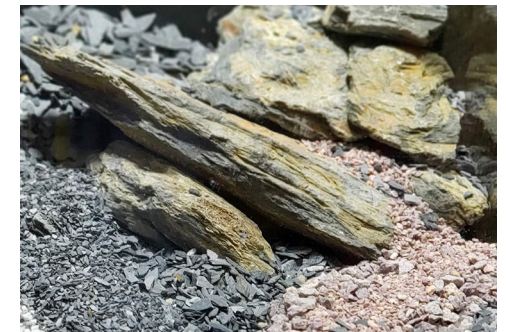
To get a shopping list for this article, visit the *MRH* website at this link: mrhmag.com/magazine/running-extra/2021-03/ah-hah-moment

THE AH-HAH MOMENT | 2

1. Many places in North America have waterfalls with flat horizontal strata. Modeling these riverbottoms using the affordable natural aquarium stone chips works well and gives a believable result. There's nothing like real stone to look like the real thing.



2. We used real slate stone pieces to model this New England covered bridge scene on the TrainMasters TV TOMA project layout. In this under-construction photo, you can see we built up the riverbed with slate chips, added some ground foam mossy spots, and applied some acrylic gloss medium water. Next will be adding the riverbank terrain with foam and plaster.



3, 4. You can get all manner of small natural stone pieces using the shopping list link on the previous page. They're quite affordable!



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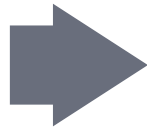
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Bonus section!

Here are all the pages from
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as well!



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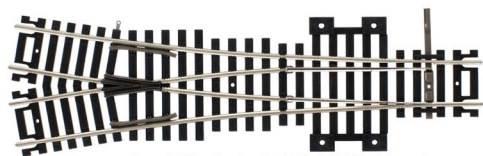
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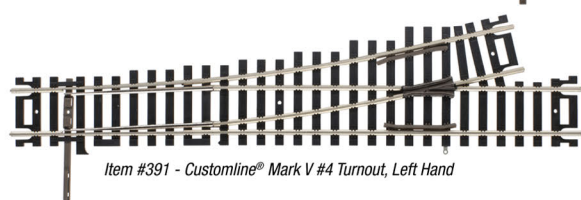
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Item #394 - Customline® Mark V #6 Turnout, Right Hand



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Item #391 - Customline® Mark V #4 Turnout, Left Hand

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Model Railroad Hobbyist | March 2021 | #133

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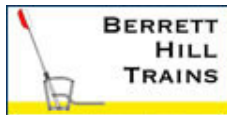
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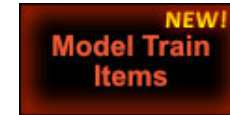
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PUBLISHER'S MUSINGS



Model Railroad Hobbyist | March 2021

JOE FUGATE IS LOOKING FOR A
WEB SAVVY VOLUNTEER ...



CAN YOU BELIEVE IT, THE FIRST ISSUE OF MRH CAME OUT JANUARY 2009. That's now 12 years ago. Also believe it or not, our website still has the original now really old issue access pages for those back issues.

That's where my request for a web savvy volunteer comes in. We'd like to update all the back issue access pages to be consistent with our new approach, but we don't have a lot of excess bandwidth right now.

My thinking goes like this: if we can recruit a web-savvy and motivated MRH reader, we will make it worth their while to help us upgrade all the old pages, paying so many dollars per page. So you can make a little hobby mad money and help us get all our pages up to modern standards.

Moving to a bookshelf paradigm

As we update each issue's access landing page, I also want to move to a bookshelf paradigm for reading and downloading back issues.

If you ever used the MRH mobile app, then you know how easy and convenient a bookshelf format makes reading issues.

As a side note, we had to discontinue the free MRH app because Apple and Google kept changing their operating systems and we



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could not afford to keep paying programmers to rebuild the app every time Apple or Google made the old app obsolete with major OS updates on an app that was free.

We can duplicate the bookshelf look using plain old web page HTML these days, thanks to HTML5. The image on the right shows what this web page might look like on an Android phone.

You can tap or click on the issue cover and the issue comes up for reading using our online edition. Or if you want to download a PDF copy for offline reading, just tap or click the red button under the



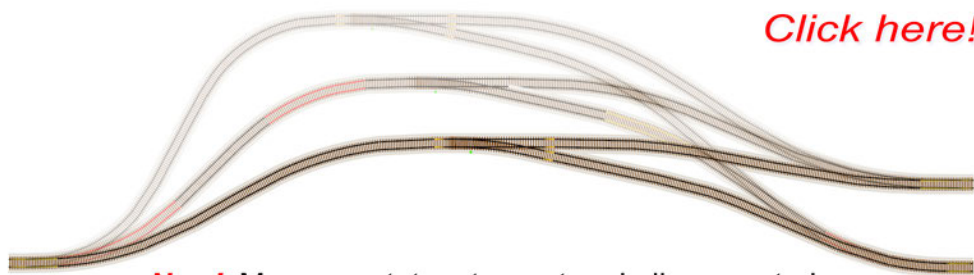
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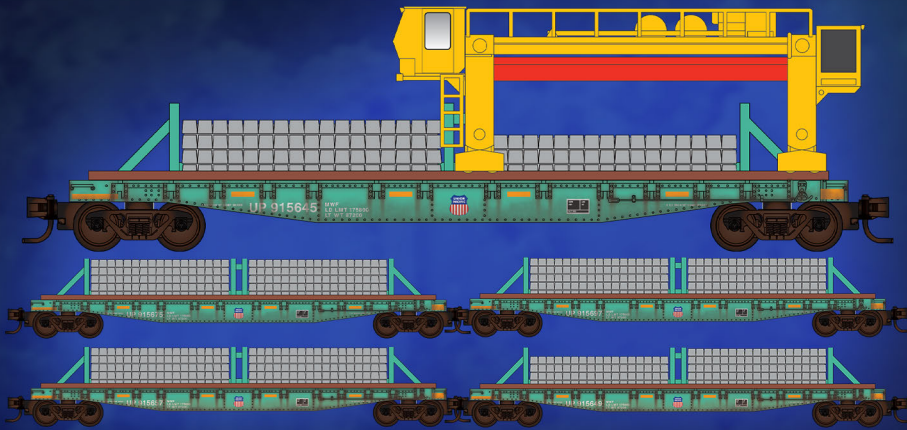
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PUBLISHER'S MUSINGS | 3

issue cover and it will take you to the download page so you can copy the issue down to your device or computer.

Scroll up or down to get to other issues since we would list them in chronological order. We can also see having a master page that just lists each year and lets you jump to the specific year and save you some scrolling.

There's more

Besides making it easier to access the back issues with a consistent, more intuitive bookshelf style web page, we also need to move a lot of the back issues to our current online issue provider, FlipHTML5.

Currently we're using three different providers for reading back issues online: Issuu, 3Dissu, and FlipHTML5.



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The new EMD FP7 has arrived!

Eight sleek new dual-service thoroughbreds viewable now on walters.com.



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Many of the older back issues use Flash technology, which as of this year has become obsolete. Browser updates now routinely do not enable Flash, so you have to go out of your way to get Flash installed and running, which is a big pain.

And on top of that, since Flash is now obsolete, installing it can put your computer security at risk. Long story short, we're long overdue to finally get rid of Flash completely.

The modern alternative to Flash is HTML5, that's why we're using FlipHTML5 now. It gives us everything we ever wanted in our online issues as to features, but it's using the mainstream HTML5 features to do it. Much better!

How to volunteer: If you know HTML5 and would like to volunteer to help us get all our back issues consistent and up-to-date, just use our contact form here and select "Volunteer to help" – mrhmag.com/contact

Remember we're willing to pay you per issue updated, so with over 100 issues now, that could add up to some nice mad money for your hobby.

Update on the new MRH Forum

Last fall I mentioned we're moving our current MRH forum to a new provider that is mobile friendly and will enable posting to the forum using email, as well as getting notified via email when someone has posted to a topic you're following.

The developers have finished writing the conversion code and we're ready to move a copy of our current forum over so you can kick the tires.

Look for an official announcement to "come kick the tires" on the new MRH forum by late March. The new forum web URL will be forum.mrhmag.com and you will be given a login on the new forum using your existing email, but we will be generating all new passwords for the new site, so you will need that before you can login on the new site.

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If you try to go and visit forum.mrhmag.com right now, you will not be able to login. We had a few MRH forum members go play around with the new forum, but what's there is just test junk right now.

We will be overlaying the test junk with all the threads and posts from our current forum later in March and then we'll send all current forum members an invite with the password they need to use to log in.

Watch for the official invite via email.

TMTV coming attractions

It's been tough making the transition on TrainMasters TV from studio segments to segments recorded virtually over the internet.

The new content on TrainMasters TV has been a bit slow in coming, but that's about to change now that we're gathering steam on the format change.

We posted some great Greg Baker clinics to TMTV

Coming attractions!

Rick Sutton

Photo-realistic modeling

6 clinics



Greg Baker

Realistic scenery & weathering

3 clinics



Geoff Bunza

Layout animation techniques

3 clinics



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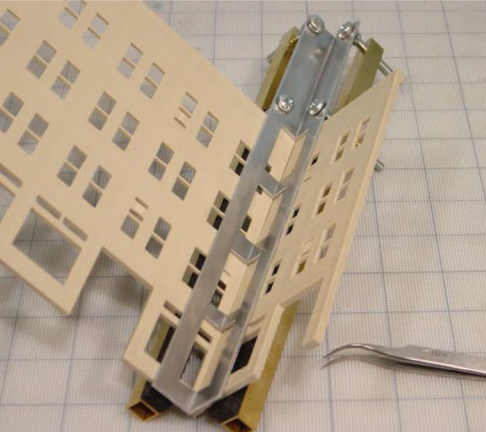
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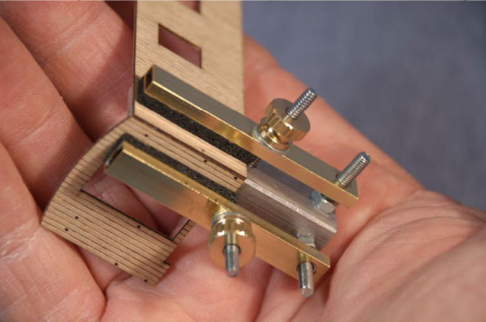
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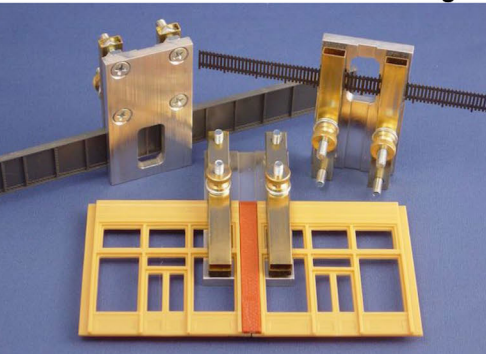
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recently. We have more segments planned with Greg, including trackwork and scenery techniques.

We also have Rick Sutton shooting in-depth how-to segments on using the highly affordable Affinity Photo editing software to replace the sky in photos, making backdrop photo panoramas, and making hyper-realistic bas-relief structure details.

See the photos on the right for a flavor of Rick's work and what he will be demonstrating!



Cutout Print n Cut file



Cutout



condenser cut structure

Next, Geoff Bunza presents how to create some really cool layout animation and LED lighting effects. If you frequent the MRH forum, then you know Geoff's posted a lot of fun projects there. Plus Geoff's always willing to help guide you past any roadblocks.

I am also planning on some DCC Decoded segments with Bob Fallowfield as the host. I'm going to be demystifying turnout frog wiring, helping you pick the best sound decoder for your needs, and I'll be delving into how to make consists and how to take your DCC loco lashups to the next level.



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RATE THIS ARTICLE

And finally, we have a new face joining the TrainMasters TV team: DIY Jimmy [photo at right]. If you frequent YouTube for model railroading videos, then you may be familiar with Jimmy already. Here's a link to his channel: [DIY and Digital Railroad](#).



Jimmy's new TrainMasters TV show will be called *Jimmy's TrainWorks*. Jimmy's TMTV show will get into more advanced and in-depth topics than his YouTube videos, covering things like advanced wiring, 3D printing, as well as more traditional modeling topics such as building cool scenery or clever tricks for doing the hobby better, like organizing your workbench.

One thing that we're especially excited about: Jimmy models mainly in N scale, so *finally* you N scalers have one of your own on the TrainMasters TV team. Plus you HO'ers and larger scale modelers, if an N scaler can make it fit, then we who model in the larger scales have no excuse! ☑

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In



RUNNING
EXTRA

Jimmy



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LAST ISSUE RATINGS

Top rated articles in the [Feb 2020 issue](#) of *MRH* are:

- 4.7 Modeling water with plexiglass
- 4.6 DCC light and sound install
- 4.6 Savvy Modeler online: Realistic foam rocks

Issue overall: **4.1**

Top rated articles in the [Feb 2020 issue](#) of *Running Extra* are:

- 4.8 Make your own static grass tufts
- 4.8 Getting Real: Stationary rolling stock projects
- 4.6 The case for high narrow benchwork

Issue overall: **4.3**

Rate the articles! Click the comments button on each article and select the star rating you think it deserves. ■

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THIS MONTH

Model Railroad Hobbyist | March 2021

Compiled by **JOE FUGATE**



Solving Atlas frog issue

MRH forum member **roadglide** (John Buckley) asked for help from the other forum members with an Atlas turnout frog:

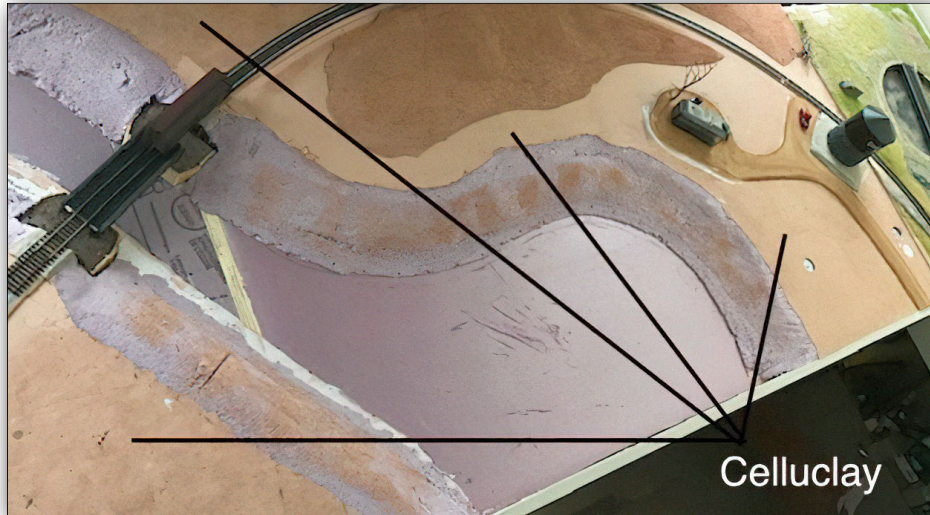
“Dead spot only on the loco right rear side. Going through the straight part of the turnout where the left rear wheels touch the frog does not cause a dead spot. So I am at a loss ...”

Read the recommendations to solve this:



View the full thread on the MRH website

► **MRH'S MONTHLY GREAT MODELER POSTS**



1. Peter Soulikias has been posting a blow-by-blow diary of his this layout scene's progress on the MRH forum.

Deep module with one track and bridge

MRH forum member **Deemiorgos** (Peter Soulikias) has a construction thread on how he's building a fairly deep scene with a bridge and a tidal estuary:

"A lot of cutting and scenicking ahead for this module ... it will only have three structures:

- A water tower
- A trailer home near the bank of the estuary
- And a little bridge to cross a narrowing of the estuary.

I think having murky water between the contours will make an interesting tide out scene."

See D's thread follow the construction progress!

[View the full thread on the MRH website](#)



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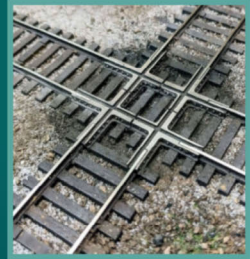
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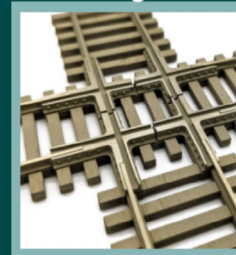
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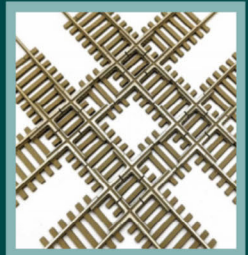
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2. Kirk Wakefield this asked about tools for removing driver crank pins and he received a couple superb suggestions.

Working with driving rod crank pins

Forum member **kirkifer** (Kirk Wakefield) needed help finding some tool that he could use to loosen steam driver crank pins:

"What tool is best for loosening the driver crank pins? I would have asked this on [other forums], but most seem very new to model railroading and are probably not removing their loco drivers."

Member **Bernd** (Bernd Fanghanel) posted a clever solution:

"Here's what I used on the crank pins of an Mantua 2-6-6-2 to loosen and tighten them. It's a hex head Allen screw [left, 2]."

Member **forfoum** (Marc Fournier) recommended some toolsets made specifically for tiny crankpin screws:

"Try the Moody Tools 58-0161 8-piece set or the Wiha 26592 Nut Driver 7-piece set [right, 2]."

Check out this thread for more details!

[View the full thread on the MRH website](#)

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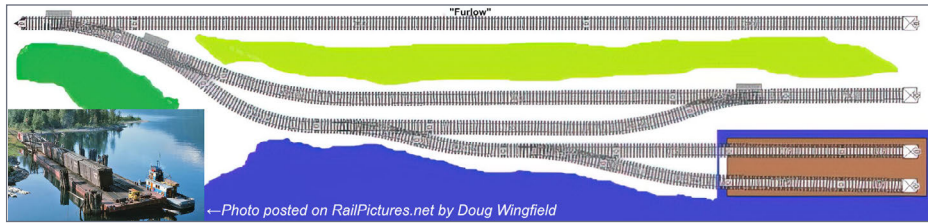
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3. Michael Tondee has an opportunity to expand his layout and he's entertaining the idea of adding a car float operation. The car float photo Michael's using for inspiration was posted on RailPictures.net by Doug Wingfield (www.railpictures.net/photo/354670).

Adding a car float operation

MRH forum member **Michael T** (Michael Tondee) posted a recent thread of an inspiration he had for a layout expansion.

"I had finally gotten a large 75 gallon aquarium out of the office/shop here and it opened up some space. Of course, being a Model Rail, my mind immediately turned to what I could be doing with that space."

Michael continued explaining his thought process:

"I started thinking about what could be added to the narrow staging shelf, known as 'Furlow,' along one wall. I've always wanted some kind of simple river or lake harbor scene with a railroad carfloat. I found the photo inspiration, here we go, Slocan Lake. Actually, 'Furlow' is meant to be a far off destination that the one hidden staging track represents. I have not thought of a name for the harbor but with my penchant for naming stuff after famous Model Rails, something like 'Hayden-Frary Harbor' would definitely fit."

Follow along as Michael develops his "Furlow" extension!

View the full blog on the MRH website

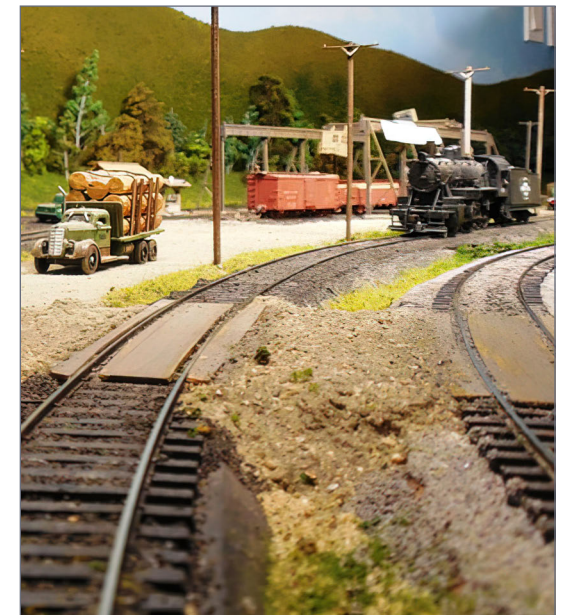
Latest MRH Weekly photo fun thread

Every week, a new Weekly Photo Fun thread appears. It's frequently loaded with inspiring photos of great modeling ...

View the full thread on the MRH website



4. The top photo is from Modeltruckshop's MTH Dash 9 he recently acquired done up in a CNW to UP transitional paint scheme, following prototype photos as a guide. To the right is a photo posted by ray schofield of his narrow gauge interchange area. We like the period log truck. Visit the weekly MRH Photo Fun thread some some inspiring model photos every week!



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WHAT'S NEAT

column



Model Railroad Hobbyist | March 2021

KEN PATTERSON'S COLUMN THIS MONTH ...



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- Wrecking cars with aluminum foil
- LED lighting for your layout
- Modeling ideas from above: Snow scenes
- Installing a TCS WOWSound decoder

WHAT'S NEAT with Ken Patterson Modeling wrecked autos



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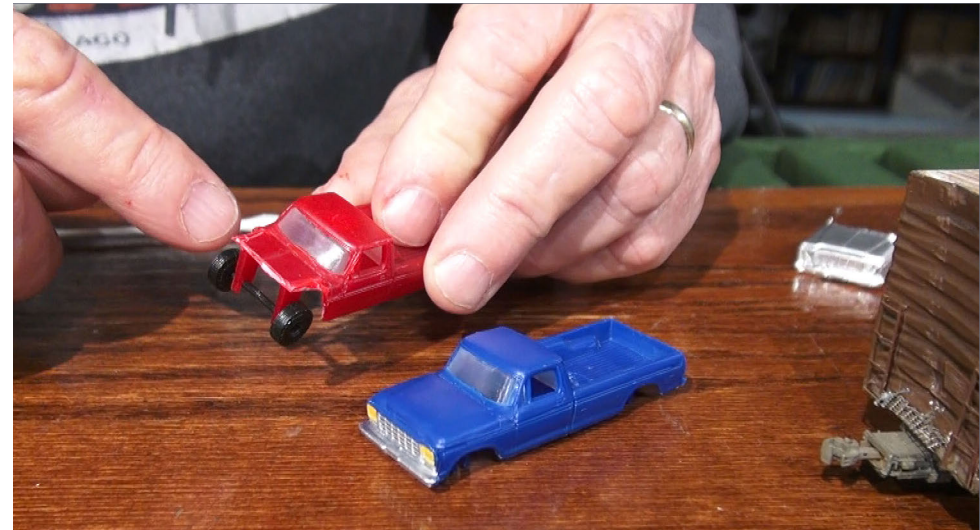
ON THIS MONTH'S "WHAT'S NEAT" VIDEO, Mike Budde shows us how he models damaged autos and freight cars using aluminum foil and white glue, John Schindler shows how daisy-chained LED tube lighting can improve the appearance of your layout, Dan Scheidell shows trains in the snow in Oregon, and TCS's Dan Mycio demonstrates installing a modern sound decoder in an older BLI Alco locomotive.

Mike Budde wrecks cars with tin foil



1. Mike Budde is well known in the hobby for his autorack models and realistic oil paint weathering methods. This month he demonstrates how he models accident damage using aluminum foil. A 1978 Ford Pickup by Atlas will be used as an example.

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2. The blue truck represents the model as it comes out of the box. Mike has cut away the body of the red truck where the foil will replace the truck's front end.

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3. Mike wraps the blue truck with a small piece of foil and uses a soft cotton swab to emboss the shape of the truck's body panels in the foil. Rubbing the swab over the foil increases the level of detail.



4. In this photo Mike shows the new foil front end of the truck next to the truck it will be attached to. The foil overlaps the doors of the pickup truck and provides a point to glue the two pieces together.



5. Mike then imitates a rear-end collision to create realistic damage to the foil portion of the red truck.



6. After Mike is satisfied with the damage he has created, he paints the model with primer to hide the line between the plastic and foil, and then paints the entire model with the automotive paint color of his choice. He then fills the inside of the foil with white glue to strengthen the foil body panels.

LED lighting improvements on John Schindler's layout



7. When Ken last visited John Schindler's layout for the January 2020 "What's Neat," it was illuminated only with fluorescent panel lights down the middle of the room, and some recessed can lights.



Also see the "What's neat this week" weekly video podcast!

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8. Since then, John has added hardboard valences and 4-foot T5 LED tube lights that daisy-chain together.



9. The lights are mounted to 1x4 boards which are in turn mounted to the ceiling grid with mounting clips that have a threaded bolt built into them. Simply screw a nut onto the bolt and the board is securely mounted.



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Modeling from above: Snowy Oregon



10. Dan Scheidell's drone footage this month features UP and BNSF trains in the snow crossing Pengra Pass on the Cascade Line between Eugene and Crescent Lake, Oregon.

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Modeling boxcars with open doors

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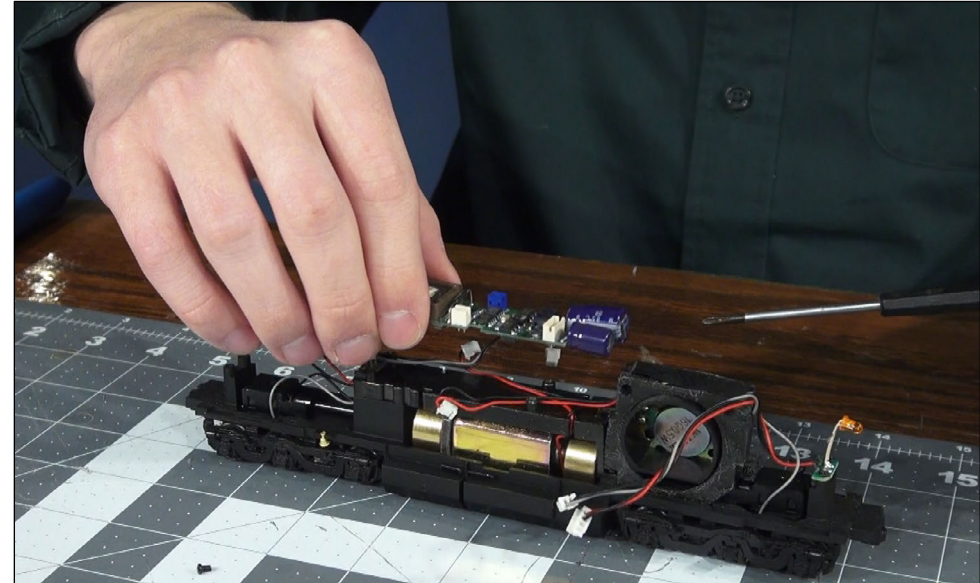
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Installing up-to-date sound in a BLI RSD-15



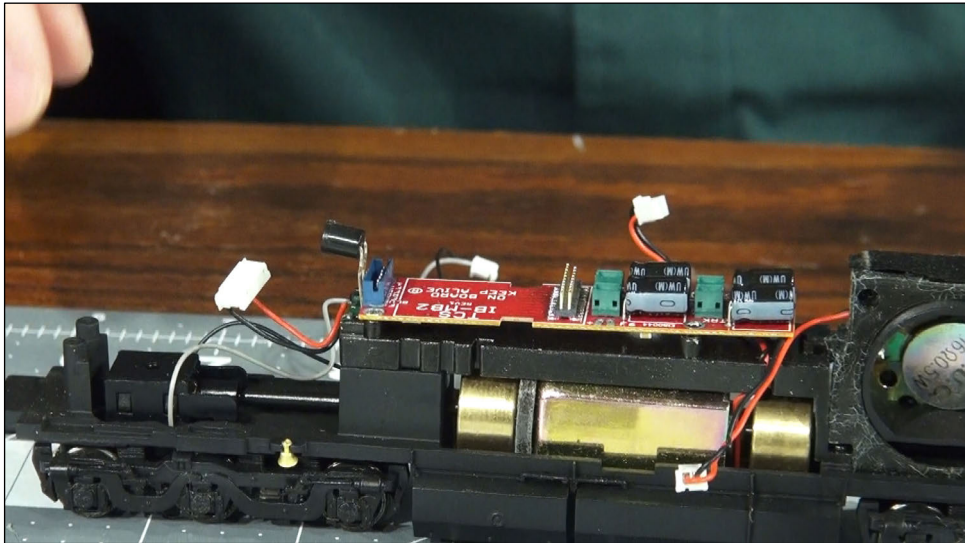
11. Dan Mycio from TCS demonstrated the ease with which an older BLI locomotive, in this case an RSD-15, can be upgraded to a modern Wowsound decoder with keep-alive capabilities and a high-bass speaker. Here he begins the process by removing the original factory-installed sound board.

★★★★★
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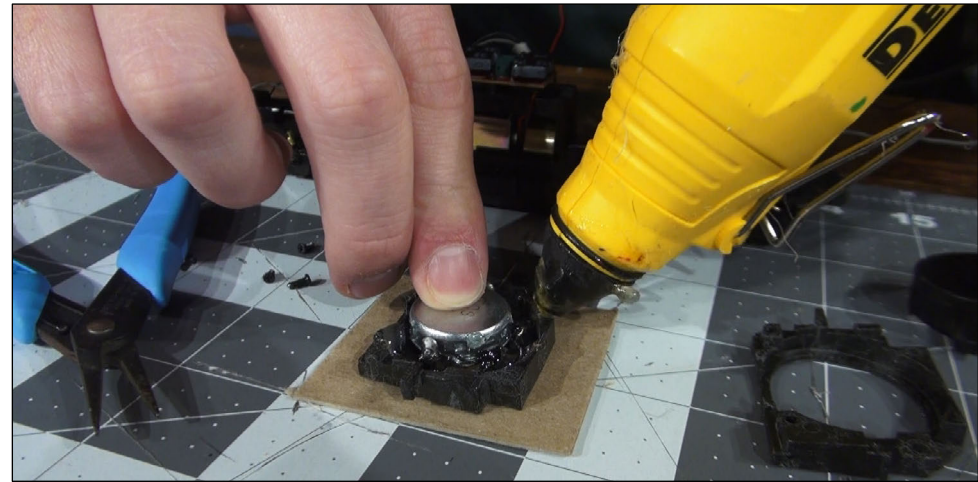
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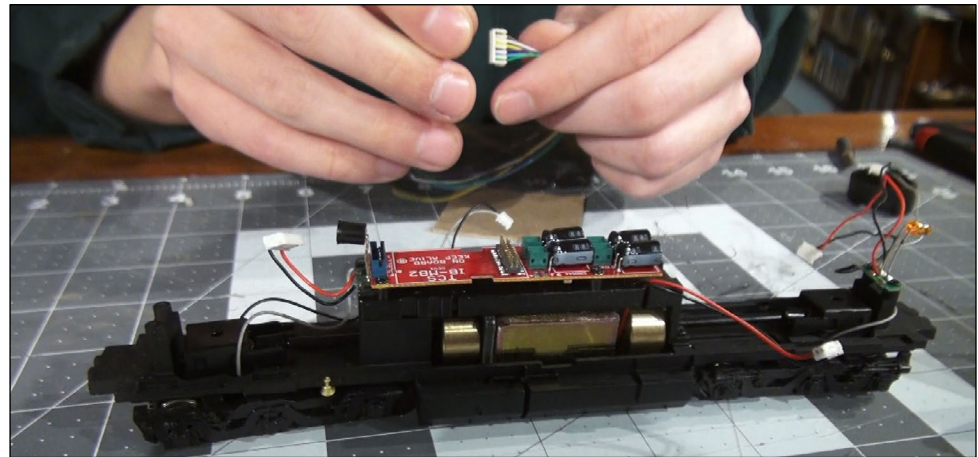
12. Next, Dan installs a TCS IB-MB2 motherboard with integrated keep-alive capacitors. The motherboard is designed to be a direct replacement for the BLI motherboard.



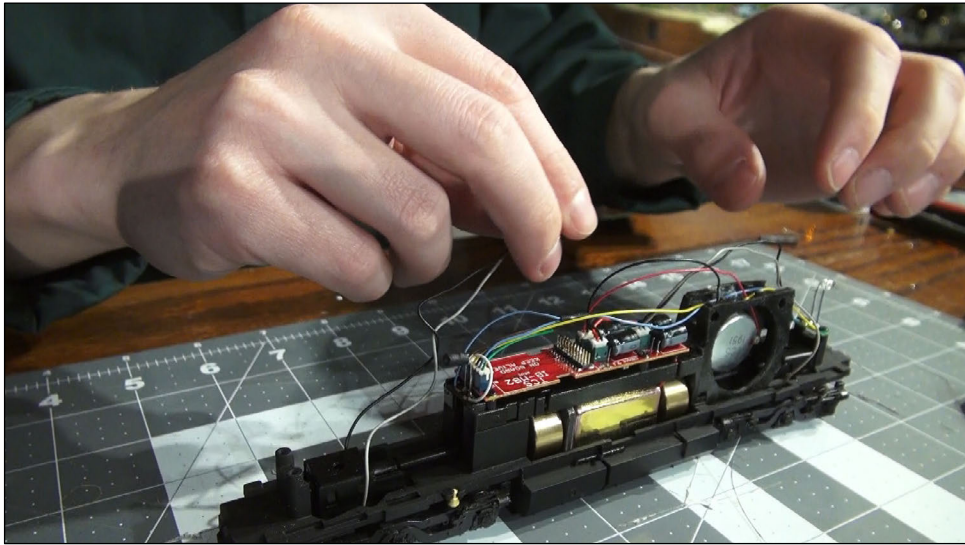
13. Dan holds the 4-watt 4-ohm TCS high-bass speaker that mounts in place of the original factory speaker.



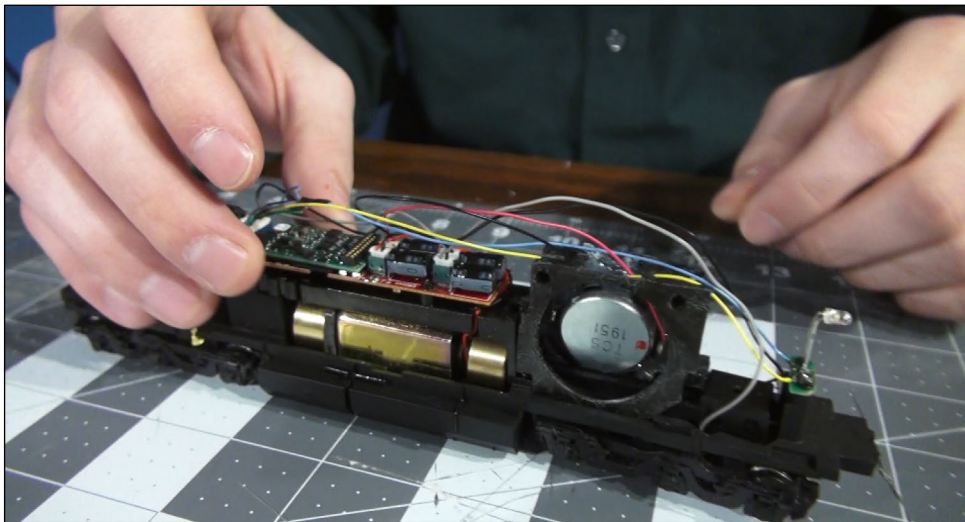
14. After a little trimming of the outside ring of the speaker, Dan secures it in the speaker mount from the RSD-15 with hot glue to eliminate vibration. He also soldered wires leading to a JST two-pin connector to the speaker.



15. To reconnect the LEDs at each end of the locomotive to the motherboard, Dan soldered the wire leads from a TCS single-inline six-connector harness to them. He used the white wire for the front headlight and the yellow for the rear, with the blue common wire completing the circuits to both.



16. Reconnecting the truck power leads and the motor wires was as simple as plugging them into the appropriate sockets on the motherboard. The speaker was also plugged in at this time.



17. Dan finished the inside work by attaching the 21-pin TCS WOWSound decoder to the motherboard by pressing it into place.



18. Here Dan reattaches the body shell and secures it by reinstalling the couplers.



19. Dan completed the installation with a demonstration of TCS's Audio-Assist feature on the TCS WOWSound decoders, changing the horn and prime mover to the correct sounds by following Audio-Assist through a menu of options that he selected with Ken's TCS UWT-100. The UWT-100 was connected to Ken's Digitrax DCC system through a Digitrax LNWI (LocoNet WIFI Interface). See the video for a demonstration of how simple this is.



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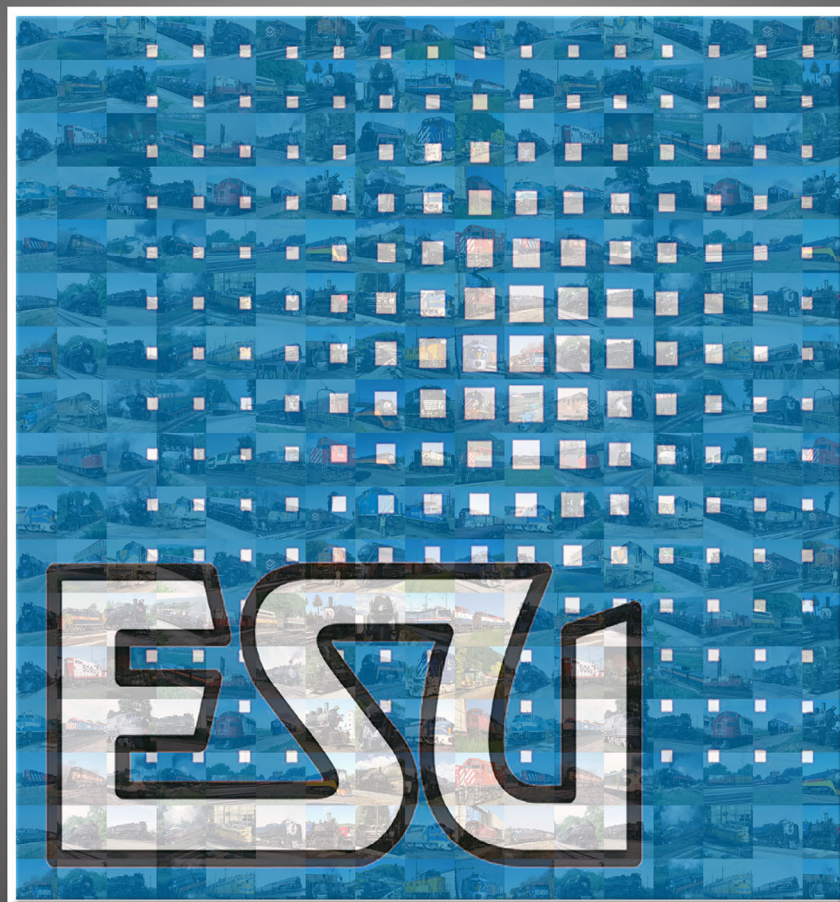
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PHIL HARTUNG SHOWS HOW
TO GET A NICE DCC LOCO FOR
ABOUT \$100 ...

1. The Proto 2000 Geeps look very nice and with just a bit of work can be made to run as well as they look. I show you how – for just under \$100 – you can get a great DCC loco for your layout.

I'VE BEEN IMPRESSED WITH THE VALUE OF THE PROTO2000 (P2K) series since they began coming out in the late 1990's. For \$65-85 plus shipping, you can get a great running diesel locomotive with just a little elbow



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grease. Add a \$30 DCC decoder with Back EMF, and for just over \$100, you've got a sweet DCC loco for your layout!

In this article, I show the steps to go from stock in the box to running like a champ on the railroad with DCC. These steps take about two hours per locomotive.

I've upgraded nine P2K Geeps previously, but didn't document the process. I recently acquired two new-in-box Union Pacific GP9s to go on my Missouri Pacific Falls City Division railroad for the Omaha transfer runs.

PROTO2000 GEEPS – THE GOOD, THE BAD, AND THE UGLY

P2K Geeps look great, with superbly fine detail and appropriately delicate handrails.

However, they have three major issues that can cause running problems out of the box – my routine tune-up procedures correct all three:

1. Excessive amounts of lubricant, especially on electrical contact locations such as between the truck and frame.
2. Split axle gears – the history and fix has been well-documented online.
3. Poor electrical contact in general, beyond the over-lubricating problem above.

Each of the locomotives I'm upgrading here had the classic over-lubrication issues and all the axle gears were split!

For more on where you can get these locos both used and new for great prices, see Joe Fugate's sidenote, "Finding P2K Geeps."

Phil's upgrades also work well on P2K's other Geeps and SD locomotives. – ed.

Finding P2K Geeps



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Proto 2000 GP9 II Pennsylvania PRR HO scale

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Proto 2000 HO Scale Pennsylvania Railroad GP9 Diesel Locomotive PRR 7221

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Proto 2000, HO GP9 II Great Northern Locomotive #703

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Proto 2000 23602 GP9 II Loco Southern Pacific #5686 HO Scale

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2. Some of the P2K Geeps available on eBay in the \$65-\$85 range (sans shipping). Most are used, but a few brand new locos show up as well, generally at the higher end of this price range.

Finding P2K Geeps *Continued ...*

Phil makes a very good point with this article – nice-looking and decent-running DCC diesel locomotives in HO do not need to break the bank. For all the flap about how expensive the hobby is becoming, with just a bit of looking around online, many great budget deals still exist for locos under \$100, such as the Proto2000 Geeps.

Surprise, surprise, you can even find brand new P2K locos in this price range! Here's where to look.

First, there's eBay. Many great deals on used locomotives exist there – just use their search features to find the model and price range you're interested in. I personally prefer buy-it-now listings, because I know exactly the price up front and I won't get sucked into a bidding war, and end up paying too much for an item.

In looking on eBay, I found many P2K GP9s in the \$65-\$85 range, not including shipping [2]. Shipping typically adds another \$10 or so. Most were used, but I did find a few brand new locos as well, but those generally cost a bit more.

I also did a general Google search and then looked at the shopping tab. In this case, I wanted only new items, not used, so I checked the new filter on the left. Again, many nice models can be had [3] for under \$100 (minus shipping).

In fact, I could use some more GP9s, so I'm tempted to pick up a couple more P2Ks in SP gray-and-scarlet, and apply Phil's upgrades to them. The price is certainly right! ■

 Proto 2000 21635 Gp9 Loco Pennsylvania Rr 7206 W/ Dynamic Brakes Ho \$89.98 eBay - arniestrains \$13.99 delivery	 Proto 2000 21741 Gp9 Loco Southern Pacific 820 W/ Dynamic Brakes Ho \$89.98 eBay - arniestrains \$13.99 delivery	 Proto 2000 23621 Gp9 li Loco Union Pacific 252 Ho Scale 5.0 ★★★★★ 1 \$90.00 eBay \$12.00 delivery
 Proto 2000 23602 Gp9 li Loco Southern Pacific 5686 Ho Scale \$84.98 eBay - arniestrains \$11.99 delivery	 Proto 2000 23874 HO Scale Western Maryland GP9 II Diesel Locomotive LN/Box \$57.17 Trainz.com \$17.35 delivery	 Proto 2000 21647 HO Scale Southern Pacific GP9 Diesel Locomotive#5800 VG/Box \$64.12 Trainz.com \$17.35 delivery

3. Brand new P2K Geeps found with a Google search. See the text for details.



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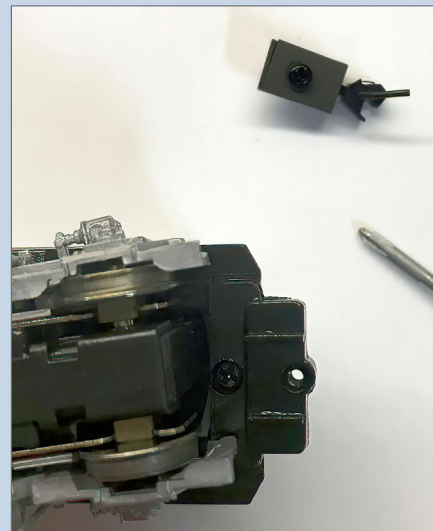


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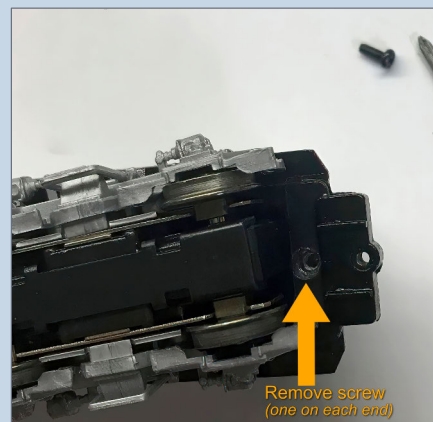


DCC INSTALL ON A BUDGET | 6

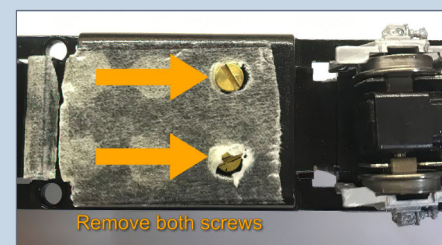
STEP 1: Take the loco apart and clean it up



4. To begin, remove the screws holding the coupler boxes and pull the coupler boxes out of the locomotive. Then remove the loco shell. Set aside the screws, couplers, boxes, and shell.



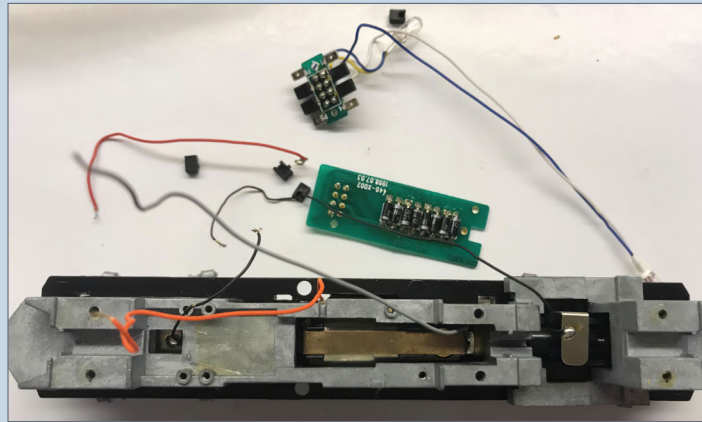
Remove screw
(one on each end)



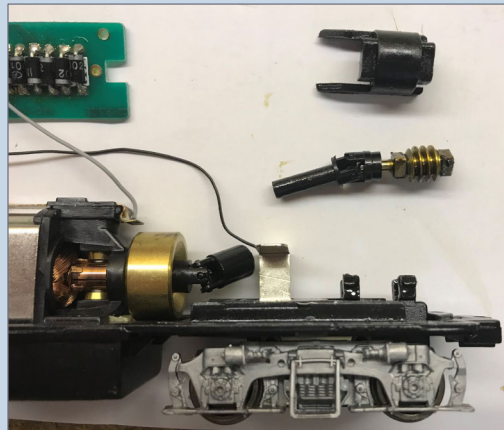
Remove both screws

5, 6. Next, remove the four screws that attach the frame to the weight. Two sit immediately behind the coupler screws. The other two are in the fuel tank. Double-stick tape holds on the fuel tank, so it takes a little gentle effort to remove it.

STEP 1: Take the loco apart and clean it up *Continued ...*



7. Remove the DCC socket from the light board. Remove the light board (two screws), and remove the red frame wire that connects to the DCC socket. Remove the black tabs from the DCC socket on the four corners for the red, black, orange, and gray wires. Finally, remove the weight.



8. Use a small flat screwdriver blade to gently pry the worm gear covers off the trucks. Pull to remove the worm gears and bushings from the truck towers, and then pull the trucks from the chassis. Gently pry the side frames from the trucks, and remove the bottom gear cover (again gently pry loose

using a small-blade screwdriver).



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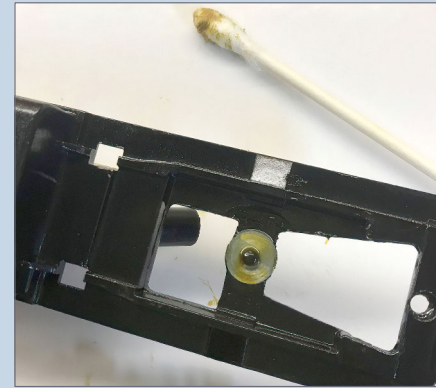
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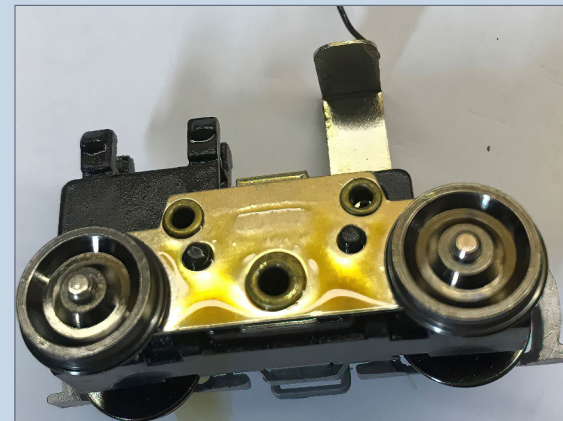
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DCC INSTALL ON A BUDGET | 8

STEP 1: Take the loco apart and clean it up *Continued ...*



9. With the trucks removed, check the chassis truck pivot point for excessive lubrication, and check the electrical connection between the truck pivot plate and the chassis. Lubricant often accumulates there, resulting in jerky running unless you bypass the connection with new wiring – more on that later. I use a cotton swab to remove the excess lube.



10. I even found lubricant where there are no moving parts, such as on the weight and the outside of the truck frames! The next step is to slip your screwdriver between the metal plate to pry four tabs to remove the bottom gear cover. Proceed to dismantle the gearbox.

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STEP 1: Take the loco apart and clean it up *Continued ...*



11. Sometimes the P2K grease can solidify into a clay or stiff peanut-butter consistency over time, and the worm gear on my locomotive was close to that. The rest was of a more fluid consistency. The next step is to clean off the lube.

Begin by wiping the excess grease from the gears, worm gears, bushings, and other parts of the trucks, including the frames. After the initial cleaning, bathe all the parts in 70% isopropyl alcohol for a few minutes. Remove any residual lube with an alcohol soaked cotton swab.

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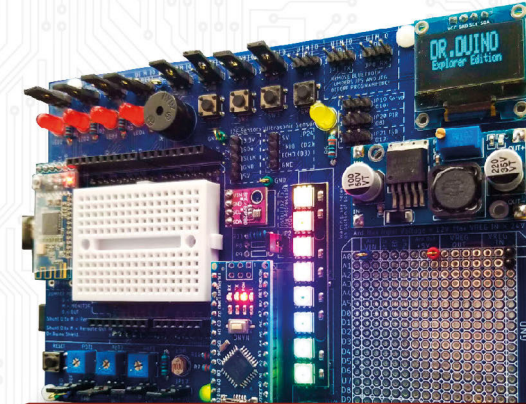
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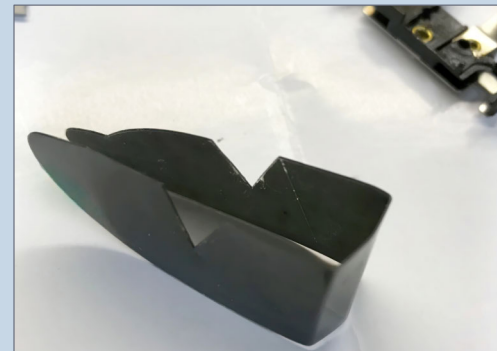
STEP 2: Reassemble the wheelset



12. As I was disassembling the trucks, the wheels easily pulled off the axle gears. I found all the gears were split just like the example shown here, and needed replacement.



13. Fortunately, Athearn's split axles, sold in packages of six (#60024), are an exact match.



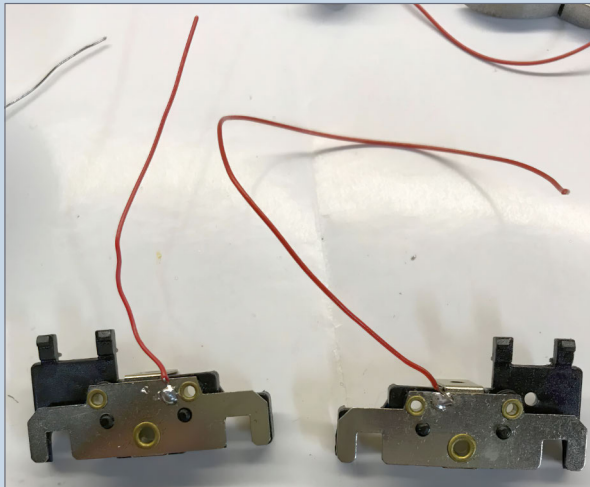
14. I made a wheelset spacer using 0.010" styrene that I salvaged from packaging for a dress shirt collar. I bent it into a U-shape and cut notches into the styrene to hold a wheelset.



15. I assembled the wheelset with the plastic between the bushing and the wheel. When compressed, this made my wheelset just a little narrow. I used an NMRA wheel gauge to make final adjustments.

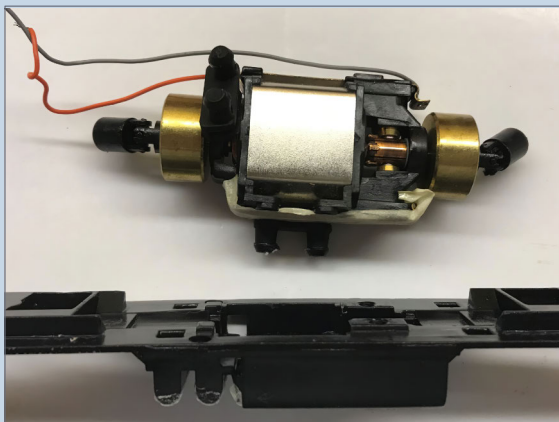


STEP 3: Bypass the truck-frame electrical connection

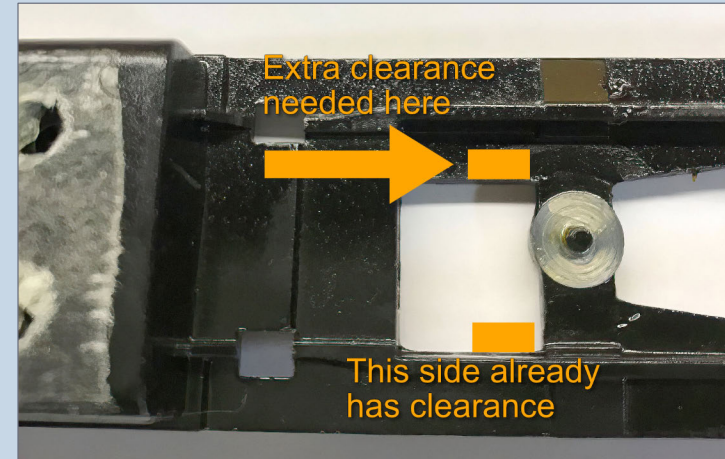


16. I soldered some red pickup wires to the metal plate on the pivot pad side frame of each truck, routing the wire directly to the decoder and bypassing the locomotive frame. Using flux, pre-tinning, and working with the soldering iron at its hottest setting

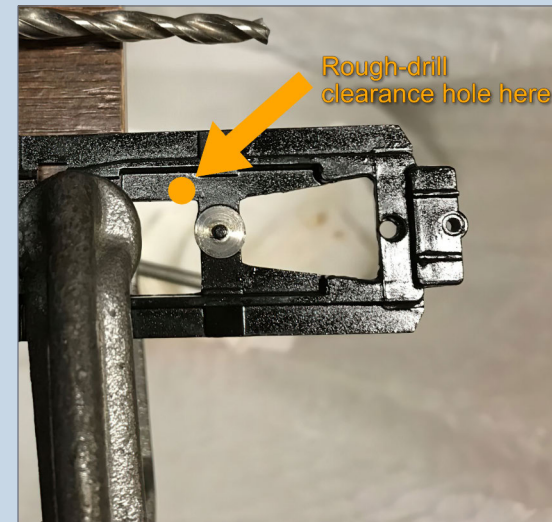
makes for a faster joint and helps avoid melting any of the plastic truck tower body.



17. I had to tool the frame around the trucks to make clearance for the pickup wires. Removing the motor prevented filings getting into the motor during this step.



18. The frame has clearance to accommodate the truck's rail pickup tab on the left, but none on the right side. Rather than risk pinching the wire between the truck and the frame, I drilled a notch into the frame.



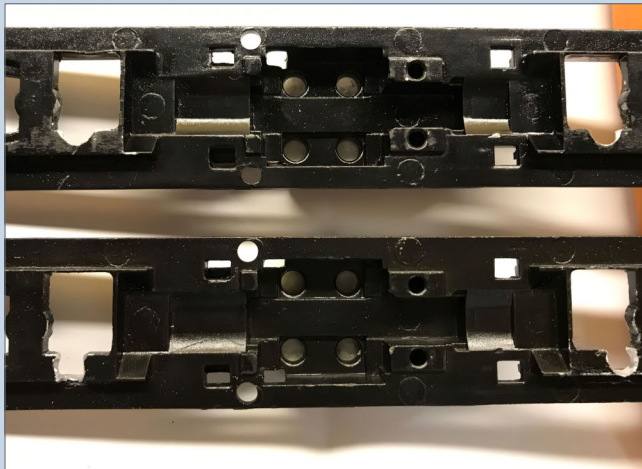
19. I clamped the frame to a board to stabilize it. Then I rough-drilled the needed extra clearance hole using a 3/16" bit. I did the same on the other end of the frame.



STEP 3: Bypass the truck-frame electrical connection *Continued ...*



20. With the 3/16" holes roughed in, I used a cone grinder bit to smooth the hole and open it into a notch. higher end of this price range.



21. Both frames with clearance notches added. Note that all edges are smooth and rounded to avoid damaging the wire.

ADDING WHEEL WIPERS



J. Fugate

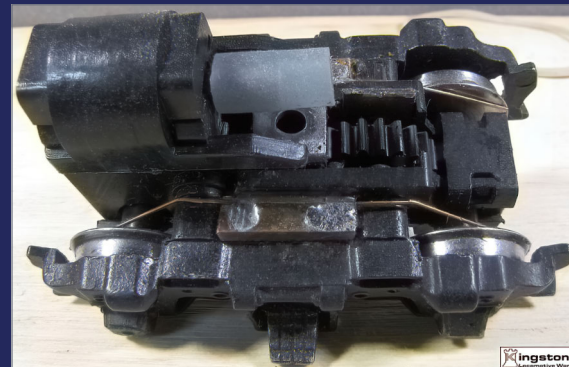
You can take this project one step further by adding wipers to the backside of the loco wheels.

MRH forum member **Bernd** (Bernd Fanghanel) posted this excellent method for adding the wipers to the backs of the wheels. He posted this photo [22] on the forum [mrhmag.com/node/16333?page=9#comment-340789].

Bernd epoxies a short piece of PC board tie to the truck tower, and then solders wipers onto the PC tie. Finally (not shown), he solders a wire to the PC tie and runs it up to the decoder from each side of the truck.

Bernd has also used with a motor tool cutoff disk to cut the L-bracket on the truck tower down to be flush with the metal pivot pad. This makes it easier to add the PC tie to that side of the truck.

In my experience, adding such wipers makes the P2K loco pickup very solid. If you also add a stay-alive circuit – I call it “belt and suspenders” loco pickup – you will get an extremely sure-footed locomotive that’s virtually impossible to stall, and becomes very resistant to poor turnout point contact or dirty/dead spots on the track. Wipers plus stay-alive give you battery-power level reliability!



22. Bernd's method of adding wheel wipers to a diesel loco truck tower.



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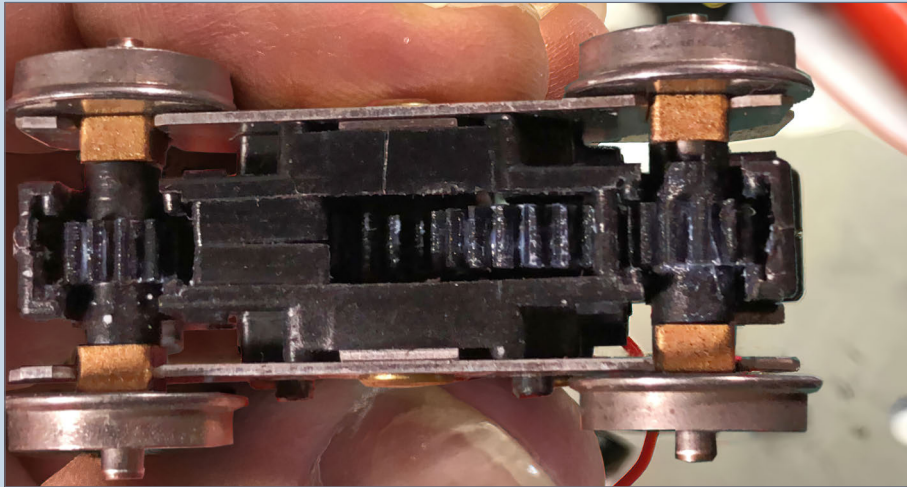
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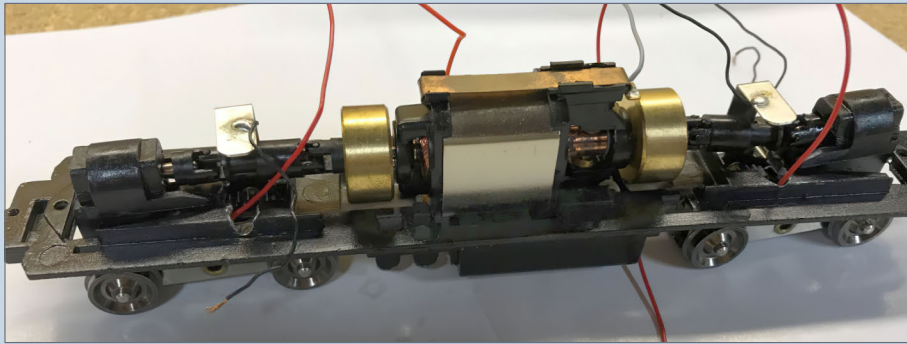
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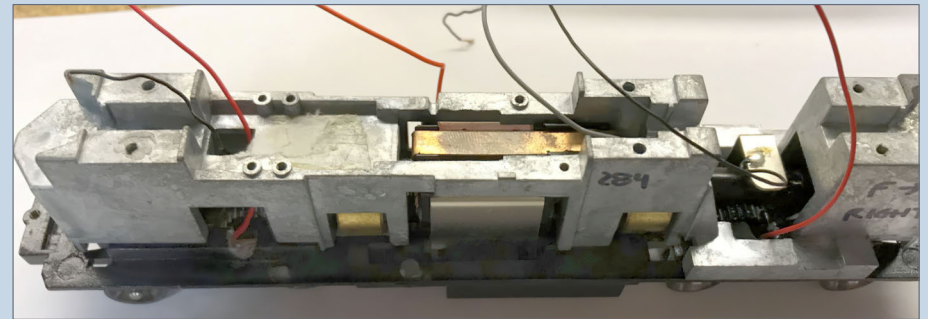
STEP 4: Reassembly



23. Reassemble the trucks. Add some light lubricant to the gear and wheel bushings. Add only a small bit of grease to the gears.



24. I reinstalled the motor, then put the trucks and worm gears back on the frame. Note I soldered also a black wire to each truck tower L bracket. At this point I tested the motor/mechanism with a 9V battery to ensure the mechanism ran free of binds.

STEP 4: Reassembly *Continued ...*

25. Install the weight, pulling the wires from the truck and motor up the appropriate notches. Screw the weight back on with the four screws removed earlier.

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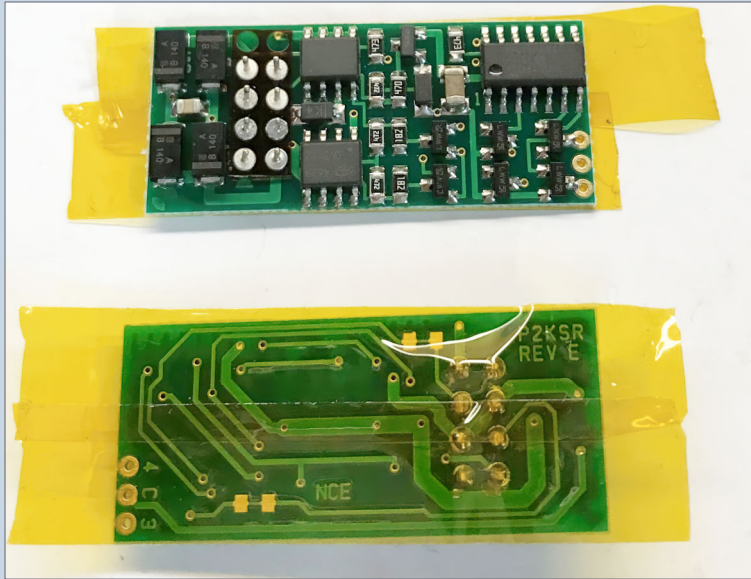


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STEP 5: Decoder and LED light installation



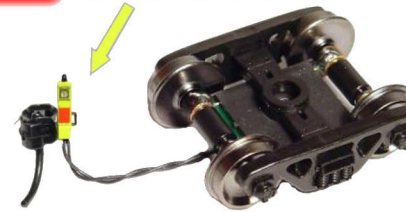
26. I used NCE P2KSR drop-in decoders (www.litchfieldstation.com/product/5240108-nce-ho-dcc-decoder-locospecific-life-like-gp-and-sd), but you can also get drop-in decoders from Digitrax (www.digitrax.com/products/mobile-decoders/dh16510) – see the shopping list link at the end of this article for more. Insulate the back of the P2KSR with Kapton tape. Any HO decoder with a short wire harness that plugs into an 8-pin socket will work, but you have to manage the decoder harness wires to fit under the shell.



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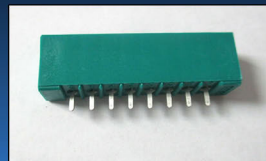
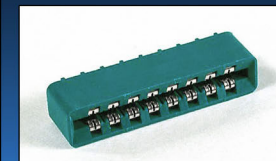
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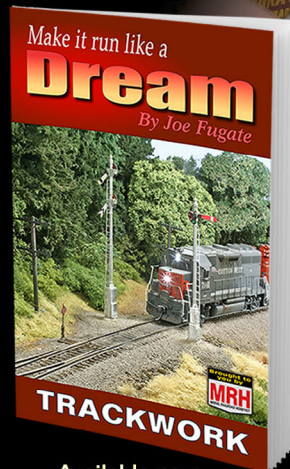
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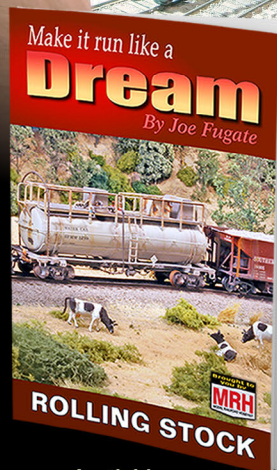
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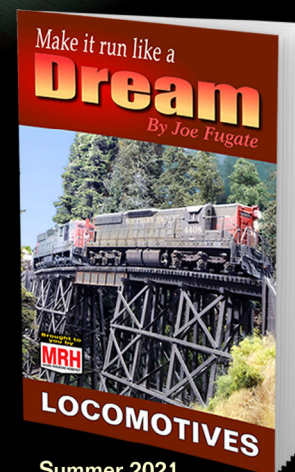
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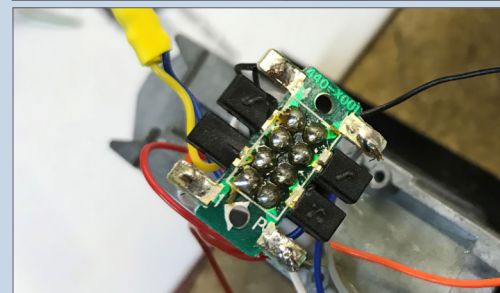
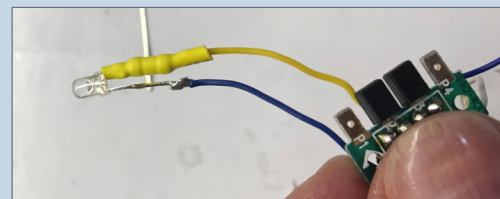
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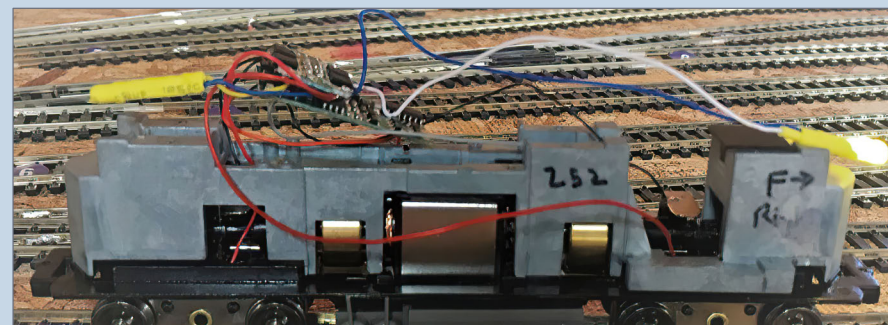
DCC INSTALL ON A BUDGET | 19

STEP 5: Decoder and LED light *Continued ...*



27, 28. I replaced the stock bulbs with 3mm warm white LEDs. I put a 1K resistor on the white/yellow wires. These connect to the cathode of the LED, which is the shorter lead. (the Digitrax drop-in decoder has onboard resistors so you don't need the separate resistor - ed). The blue wire runs to the LED anode, which has the shorter lead. I

put shrink-tubing around the resistor and another larger piece of shrink-tubing around the whole LED assembly.



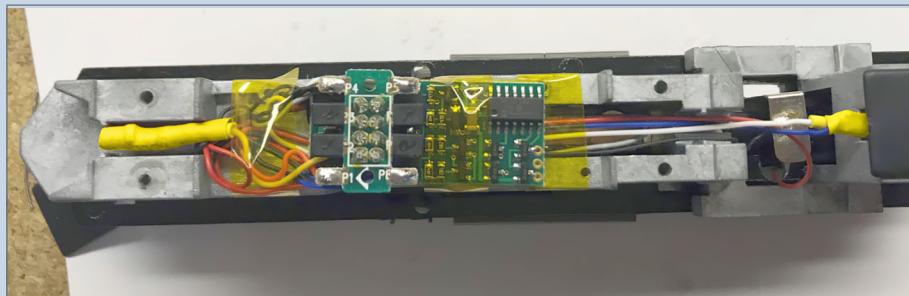
29. I soldered the red, black, orange, and gray wires back to the DCC socket and plugged in the decoder. I set the address and a few other CVs on the programming track before moving the loco onto the layout for a final test without the shell. It all checked out, so back to the work bench to tape down the wires and add the shell.

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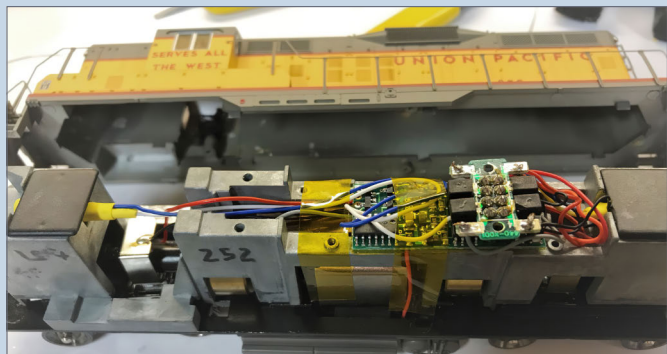
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STEP 6: Tidy up and add the shell



30. I tidied-up the wiring and use Kapton tape to keep the wires and lights in place.

Note: before proceeding with final assembly, I always check if the locomotive has any added detail parts, such as winterization hatches, that require drilling holes through the shell. It is easier to do this from inside the shell, so I take care of that step before assembly.



31. Press the fuel tank back onto the frame. Put the shell on and install the couplers back into the slots at the ends. I replaced the P2K couplers with Kadee #5 or equivalent. Be careful of the plastic coupler lift bar on the pilot, as it can interfere with sliding the coupler box in. I use tweezers or a small screwdriver to gently pry the lift bar out of the way while installing the coupler box.



32. Put the loco back on the layout and program the lighting as you see fit. Give the loco a good break-in and enjoy your nice-running budget locomotive!

So if you shop around a bit, for just over \$100, you can get a great running DCC locomotive! ☑

★★★★★
RATE THIS ARTICLE

PHIL HARTUNG



Thanks to his grandfather's 40-year career with Union Pacific, Phil Hartung developed an interest in railroads and railroad models since he was 9. He has built several model railroads, dabbled in HO_n3, and his last two layouts have incorporated his grandfather's Lionel O-gauge on a level below the HO deck.

Phil has been using NCE DCC since 1998 and has installed decoders on his own equipment since that time. He has gradually added LEDs and a few sound installs to his skillset. In addition to DCC, the current layout had been fully signaled, but he took the signaling out when he shifted from mainline running to local switching as his layout's focus.

Phil's medium sized layout represents the Missouri Pacific in Omaha circa 1955, incorporating transfer runs from connecting railroads (CB&Q, RI, UP, CNW, IC, CGW).

Phil especially focuses on making the railroad run well, taking special care with his trackwork and rolling stock. He believes "a layout without scenery that runs great will get used – a layout with great scenery that doesn't run well collects dust." He's also a member of the Operations Special Interest Group and Missouri Pacific Historical Society. Phil hosts operating sessions a few times a year for regional modelers, and annually for operators from Utah that come up to the annual Idaho Falls train show.

Phil lives in Idaho Falls, ID with his wife. He works as a Program Manager for a government contractor. He also enjoys cooking, baseball, traveling and visiting his grandson in Utah. ■



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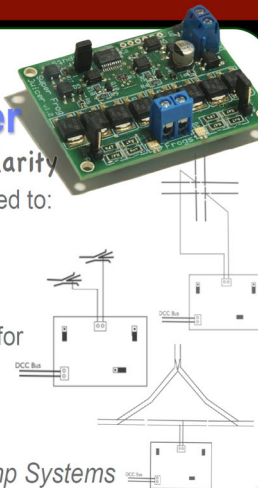
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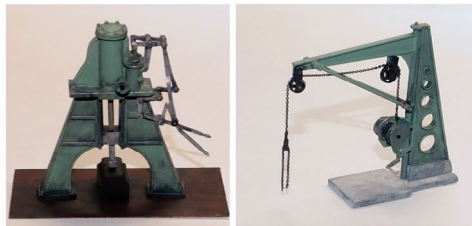
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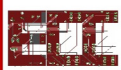
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MRH's Floquil / PollyScale Paint Equivalents Conversion Chart - 1

Floquil / PollyScale Color (approx.)	Model Master	Vintage Modeler	Model Color	Notes
Primer Gray	MM 4912	VMA 71.050	16-12	
Engine Black	MM 4888	HL 20000 VMA 71.201	16-01	
Streamliner Black	MM 4912	VMA 71.050	16-12	
Gray Black	MM 4912	VMA 71.050	16-12	
Weathered Charcoal Black	MM 4912	HL 20000 VMA 71.050	16-05	
Reflector Gray	MM 4887 MM 4912	VMA 71.050	16-04	
Reflector White	MM 4887	HL 20000 VMA 71.050	16-02	
Gring Black	MM 4887	HL 20000 VMA 71.050	16-03	
Caboose Red	MM 4887 MM 4912	HL 20000 VMA 71.050	16-08	See the #102 with 20% black for a closer match to the old PollyScale Caboose Red. Color #102 is a close match to the old PollyScale Caboose Red. Color #102 is a close match to the old PollyScale Caboose Red.

MRH's Floquil / PollyScale Paint Equivalents Conversion Chart - 2

Floquil / PollyScale Color (approx.)	Model Master	Vintage Modeler	Model Color	Notes
Tan	MM 4890*	VMA 71.055	16-15	
Reflector Orange	MM 4887*	VMA 71.053	16-09	
Reflector Yellow	MM 4889	VMA 71.058	16-10	
Red Brown	MM 4884	HL 20000 VMA 71.059	16-07a	
Railroad Teal	MM 4885	HL 20000 VMA 71.059	16-08*	Close match to the old PollyScale Railroad Teal. Color #104 is a close match to the old PollyScale Railroad Teal.
Red Brown	MM 4890*	HL 20000 VMA 71.059	16-07b	
Red	MM 4885	HL 20000 VMA 71.059	16-02	
Concrete	MM 4886	HL 20000 VMA 71.059	16-01*	Close match to the old PollyScale Concrete. Color #105 is a close match to the old PollyScale Concrete.
April Concrete	MM 4885	HL 20000 VMA 71.059	16-04*	Close match to the old PollyScale April Concrete. Color #106 is a close match to the old PollyScale April Concrete.

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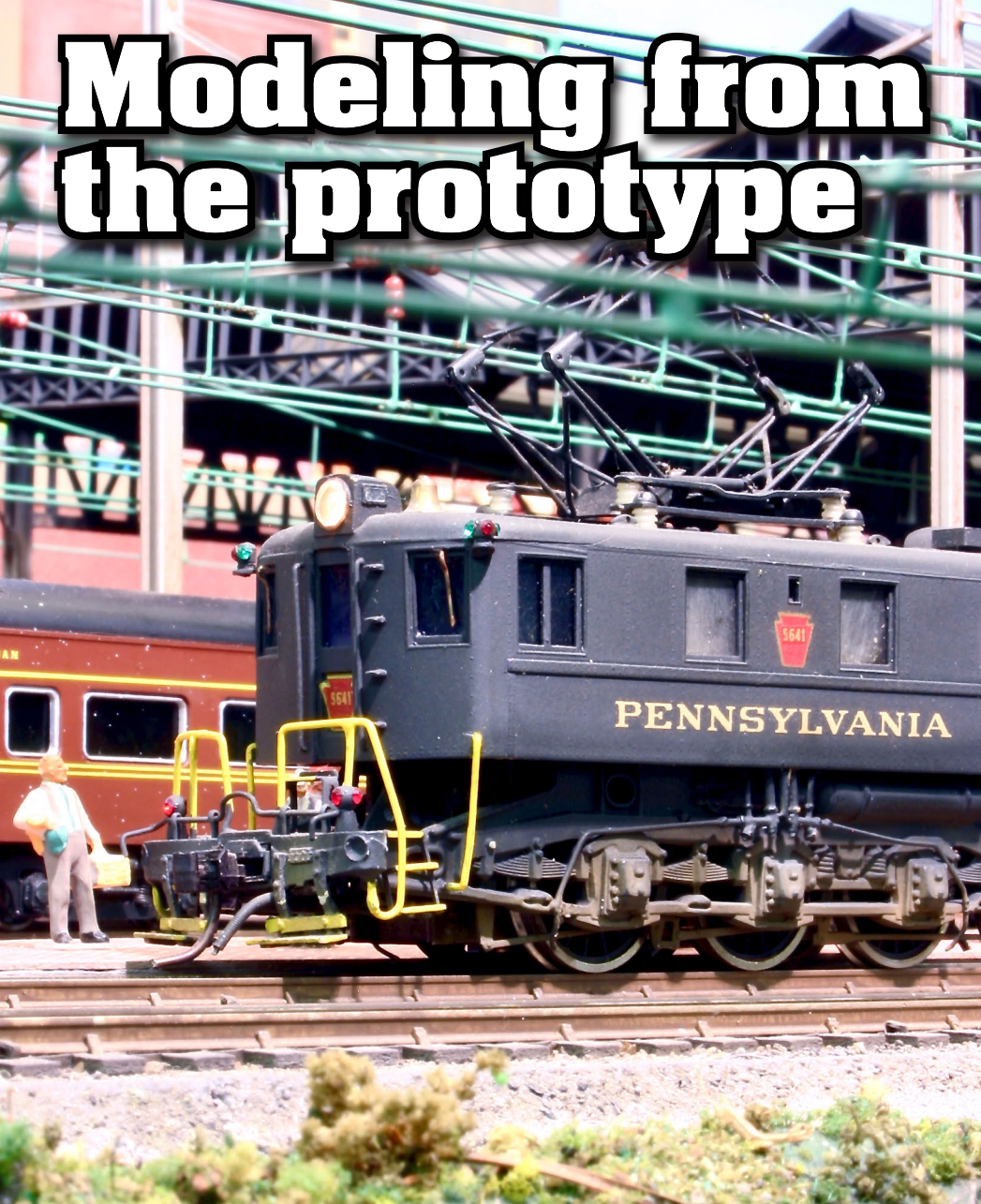
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Modeling from the prototype



Robert Schleicher looks at Bill Kachel's Pennsylvania Railroad Cosmopolitan Division in a walkaround tour

MODELING FROM THE PROTOTYPE | 2

1. A Pennsy class B1 switcher under catenary at Harrisburg passenger terminal.

Model Railroad Hobbyist | March 2021



BILL KACHEL'S LAYOUT IS ONE THE MOST COMPLEX MODEL RAILROADS we have seen. His goal was to recreate the action in the heart of the Pennsylvania Railroad, but also include portions of the Lehigh Valley, Reading, Baltimore and Ohio, and New Haven in HO scale. His layout spans the area from Pittsburgh to New York City.

Even with a massive 52 x 88 foot layout space and 2,600 square feet of benchwork, the layout could contain only a tiny percentage of the line. Bill opted to select just the signature places, trackwork and structures as they were in 1965. They are all there in representation: Zoo Tower, the Altoona shops, Horseshoe Curve, New York Harbor, Sunnyside Yard, Hell Gate Bridge, Penn Station, and more.

Bill began construction in 1982. By 1992, he had 1,600 square feet of layout completed to represent the Pennsylvania Railroad from Newark, New Jersey, west through Harrisburg and Altoona to Pittsburgh, Pennsylvania.

He spent the next 10 years adding another 1,000 square feet of layout to include the mainline from Newark northeast through New York City toward New Haven, Connecticut via the Hell Gate Bridge. The newest extension includes replicas of signature buildings on and around Manhattan Island, including Penn Station, the Hell Gate Bridge, the power plants, and the downtown around the Flatiron building, as well as the Stuyvesant area of the city.

Bill designed his layout for operation of all of the different types of trains that worked the area. Switchers operate on the docks and in the Altoona shops. Local freights, mainline passenger trains, and freights flood the four-track mainline through the Northeast Corridor.

Helixes serve three large staging yards holding trains bound for Washington, Philadelphia, New Haven, and Chicago. All locomotives are equipped with Digitrax DCC and sound, with about 24 outlets located around the layout for tethered throttles.

Layout construction is typical open-grid, with mostly flex track and ready-laid turnouts. Bill chose code 100 rail for the mainline and code 70 for the industrial areas. He laid the trackwork to match the standard designs of the full-size Pennsy, with gentle curve easements and smooth vertical curves.

The maze of overhead wires captures attention. Those wires are the often overlooked signature of northeastern railroading. Bill scratchbuilt thousands of feet of authentic overhead catenary that replicate the electrified areas from Newark, New Jersey west to Enola, Pennsylvania, and north to New Haven, Connecticut.

The wires are not electrified, but all of the electric locomotives' pantographs ride on the wires. The supporting towers' vertical posts are 1/8" brazing rod, with crosspieces in code 70 and code 100 rail. The braces are 1/16" brazing rod with most supports 1/32" wire.

Bill soldered the catenary itself together with .010" steel wire in jigs. There are also thousands of high-tension power lines, as well local power poles with full rigging.



BILL KACHEL'S 10 SIGNIFICANT FACTORS THAT MAXIMIZED THE SATISFACTION FROM CREATING THIS MODEL RAILROAD:

1. Why did you select this particular railroad?

I grew up alongside the Pennsylvania Railroad in my area near the electrified main line. I would stop and watch the mighty Pennsylvania GG1 in action.

2. How did you determine which portion of the real railroad to model?

In modeling the Pennsylvania Railroad, I had to go from the beginning to the end, which meant I started in New York and had to go through Pittsburgh. The remainder to Chicago would be a staging area, as well as Washington and Philadelphia.

3. How did you decide which era or eras to recreate?

The era I decided to model would be at the end of the old box-cab electrics and the beginning of modern diesels.

4. What type of freight and passenger operations did you recreate?

I wanted to model the as much of the action as possible on the Pennsylvania Railroad's electrified main line, and the area north of Newark.

5. What were the most important factors you considered when designing the layout to fit the space?

The space I chose was a basement as big as the house on top. I would own the basement and my wife would own the house on top.

6. What are the defining (signature) structures?

New York City's skyscrapers, Hell Gate Bridge, the original Penn Station in New York, and the waterfront for ocean-going ships

BILL KACHEL'S 10 SIGNIFICANT FACTORS THAT MAXIMIZED THE SATISFACTION FROM CREATING THIS MODEL RAILROAD *CONTINUED*:

and tugs. I wanted to model Pittsburgh and the structures there as well.

7. What are the defining (signature) scenes?

The Pittsburgh area had to have a large steel mill as a huge part of the area. The scenes I most wanted to model were the Horseshoe Curve, the Altoona area, the Penn Station large complex, Sunny-side passenger yard, and the dockside coal loaders with – of course – coal unloaders.

8. How did you decide on the locomotive roster?

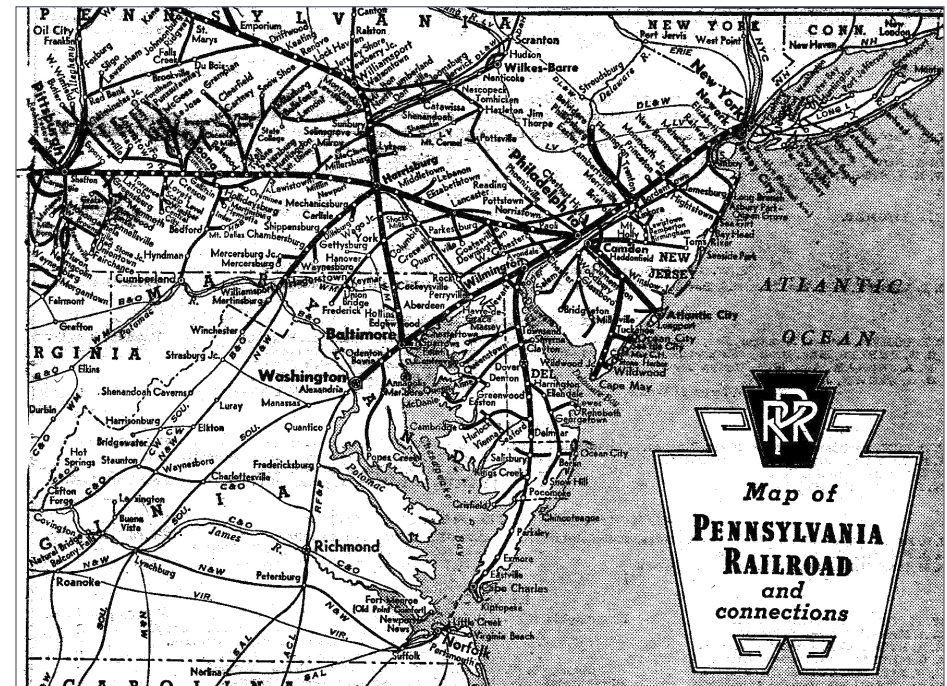
Locomotives would stay at the 1965 era, give or take a few years.

9. How did you decide on the mix of cars in the freight car fleet?

The freight car era would also stay within the 1965 era with a few modern cars here and there that looked awesome! The passenger car fleet is also in the 1965 era, with some going back a few years.

10. What research sources were most useful?

My source of reference in building and modeling was mostly from my many years of railfanning starting in 1957. I have every book that has been published on the Pennsylvania Railroad, and many books on locomotives. ■



2. Bill recreated stretches from Pittsburgh on the upper left, eastbound through Altoona and Harrisburg, then skipping to Newark and New York on the far upper right. From the passenger operation schedules in the April 1961 *Official Guide of the Railways*.

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HOBOKEN AND NEWARK, NJ



3. The Hoboken, New Jersey, passenger terminal is one of the first sights you see when entering Bill's empire. Newark, NJ is down the hill to the right. Manhattan is around the curve to the right from Hoboken Terminal.



4. (Above) This rotary dumper serves the Newark Bay Powerhouse. Bill scratchbuilt it from brass.

5. (Below) A panoramic view of Newark Bay harbor. On the far left, a rotary dumper loads coal onto a barge [7]. The Lehigh Valley Railroad bridge at Newark Bay's entrance is to the right [6].





6. The Lehigh Valley Railroad's lift bridge spans the entrance to Newark Bay. Bill scratchbuilt the bridge with Central Valley girders and styrene panels.



7. Bill built this rotary dumper based on a prototype from the Lehigh Valley Railroad to load barges at Newark Bay.



8. A GG1 coming off the Newark Bay lift bridge.

NEW YORK HARBOR



9. A panoramic view of New York Harbor. The docks at the left serve various ships. A 12-foot-long grain conveyor leads across the layout from the elevator yard at right to surge bins on the harbor at left.





10. An operational rotary dump loads coal onto waiting ships in New York Harbor.



11. Bill replicated examples of all the important industries of a typical ocean-side harbor, including a freight car ferry.



12. Bill motorized two traveling cranes to recreate some of the action at the New York docks.



13. A compressed model of one of the warehouses that served New York Harbor occupies one of the piers.



PHILADELPHIA



14. Down the line to Philadelphia. Bill wired city electrical and phone poles in addition to the maze of catenary wires on the mainline. The smaller industrial buildings represent some of the challenging operational aspects of the Pennsylvania Railroad prototype.



15. The layout features an accurate replica of Zoo Tower in Philadelphia, which monitored one of the most active junctions on the Pennsy.

HARRISBURG



16. Harrisburg, Pennsylvania wraps around a layout dividing wall. Rockville Tower and Enola Shops are to the left; the station is to the right. The yellow buildings in the foreground are the Palumbo Cement Works.



17. The covered passenger sheds at the Harrisburg passenger terminal are situated in the electrified portion of the layout.





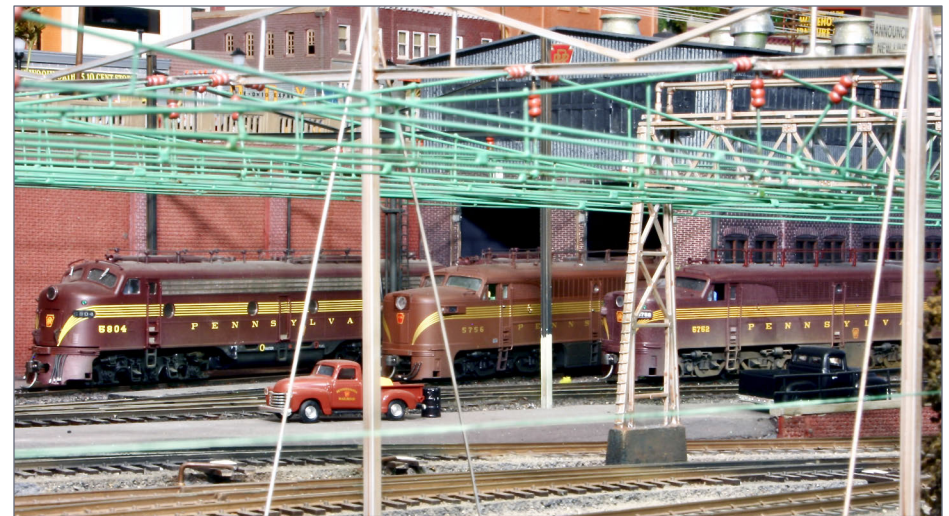
18. A GG1 drifts past the Enola shops. Next stop is the Harrisburg Station.



19. Two FAs and a GP30 take on fuel at the Enola shops.



20. Two F-units take on sand at Enola.



21. The Enola locomotive shops serviced both diesels and electric locomotives. Here we see some Pennsy passenger power.





22. The Rockville Tower at Enola is one of dozens of signature buildings that define the layout's locale.

WESTWARD TO PITTSBURGH



23. Just down the line from Harrisburg, these grain elevators at Spruce Creek provide a bucolic contrast to the industrial areas on other portions of the layout.

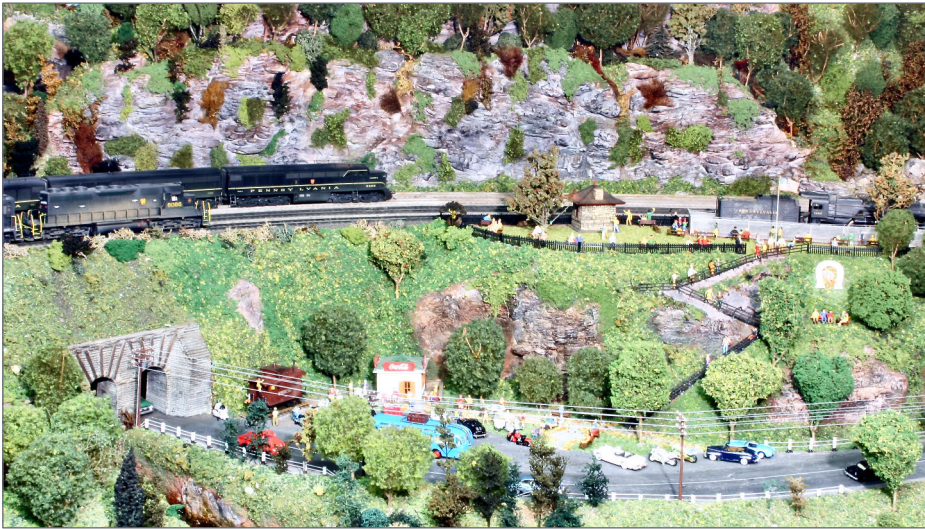


24. A geep works the limestone quarry at Spruce Creek.



25. The Juniata shops in Altoona are on the non-electrified portion of the layout. The shops are busy today, with a variety of locomotives there for service.



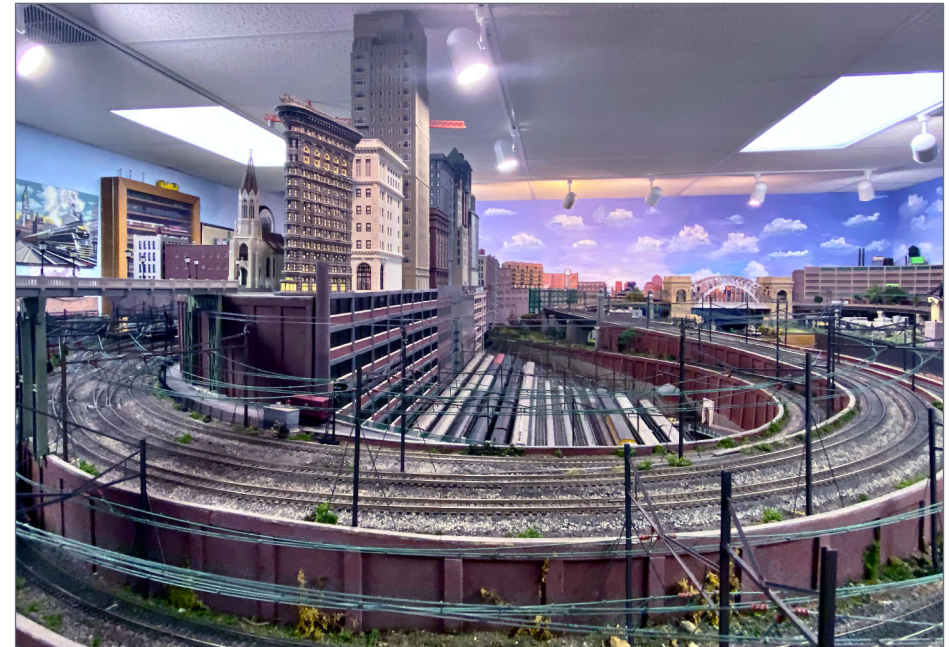


26. A freight train and a passenger train glides downhill at Horseshoe Curve. Notice the K4 locomotive on display in the park.



27. The open hearth furnace at the Sgrignoli Steel complex in Pittsburgh. Bill put Pittsburgh on its own peninsula.

MANHATTAN



28. The area around Manhattan Island fills one of the rooms in Bill's basement. The 24-track Sunnyside passenger yard is in the center of the photo, just below the model of the Flatiron Building. Off in the distance to the right is the Hell Gate Bridge. Fred Eison photo.

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29. A five-track passenger yard represents the tracks beneath Penn Station, with the facade of the station on the upper right.

Fred Eison photo ☒

For lots more photos of Bill Kachel's Pennsy, see [this month's bonus downloads](#).



ROBERT SCHLEICHER



Robert was editor of *Railmodel Journal* for 19 years and, prior to that, editor of *Model Railroading* magazine. He has also authored over a dozen model railroad books including the *Tyco Model Railroad Big Book Of Model Railroad Track Plans* and three books for Lionel. Bob has been a consultant to several manufacturers and helped to kick-start the Railroad Prototype Modelers concept. He is modeling the standard gauge Colorado & Southern in northern Colorado circa 1959 in HO scale. ■



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Ops for the rest of us

Part 4



DOUG MATHESON SHOWS THE
MOVEMENT OF INDIVIDUAL CARS ...



THE MOVEMENT OF INDIVIDUAL CARS OR CAR FORWARDING IS WHAT most modelers think of when they discuss operations. Many think of complex schemes for moving cars, mounds of paperwork, and/or sophisticated computer software. With an operations light approach, you can move goods and people on your layout purposefully without the complexity.

WHY IS A FREIGHT/PASSENGER CAR FORWARDING MECHANISM NEEDED AT ALL?

OK, the engineers and conductors know the back story of your railroad, the transportation plan, and the train(s) they will operate. Crews also need specific direction about which cars they should move where. This challenges the crew to accomplish the task while interacting with other operators working other trains.

APPROACHES AVAILABLE IN AN OPS LIGHT ENVIRONMENT

There have been a variety of operating schemes over the past 75 years, the majority of which involve significant paperwork. Modelers argue over the degree to which any given approach

1. Greg Stubbings uses car cards/waybills on his CN Lindsay Division. The paperwork involved is evident looking at the row of boxes – one for each yard track – and the stacks of car cards in them. Achieving a less paper-intensive environment requires vast simplification.

best represents reality. Let's look at some possible approaches for an operations light environment in increasing order of complexity.

The crew decides

About 70 years ago, Whit Towers operated his Alturas & Lone Pine by letting the crews decide whether to drop or lift cars as they went along. Whit set the length of the train, but otherwise crews had the freedom to determine their own workload.

This worked for Whit and his operators, but it wasn't prototypical. Most folks today would assign crews to move only certain cars to specific destinations, leaving the crews only to determine how to do so.

Even/odd

In scales larger than N, reading car numbers is a reasonable task. If a train works a given town or industry, the crew pulls cars from the sidings and replaces them with similar cars from the train as available. Later odd-numbered cars go west, and even numbered cars go east – to staging or the end of the line.

While this instructs the crews which cars to move and where, it is unrealistically arbitrary and lacks purpose.

Tabs on the car roofs

In this scheme, the layout owner puts tabs on the roof/top of each car to denote its destination. The color designates the destination town, while a number sets the siding.

The crews have specific tasks to perform, which makes movement more realistic, and since the destinations make "business sense," they have purpose. Unfortunately, the colored tabs themselves compromise the models' appearance.

Like cars for like cars

In this scheme, a crew swaps like cars as it works an industry. For example, a crew moves a cut of boxcars from staging,

exchanges them for the same number of boxcars at an industry, and sends those to staging. The overall approach recycles cars so the railroad is in the same state as when it started, ready for the next session without the owner having to do anything.

The drawback is that the cars are in dedicated service, cycling between an industry and staging. This detracts from the realism, but then again there are many blocks of railcars in dedicated service in the real world.

MANUALLY GENERATED SWITCH LISTS: A SMALL STEP BEYOND PAPERLESS

Some modelers, including Mike Hamer and me, have found that manually generated switch lists are simple and adequate for our needs because we can reuse the switch lists. While the approach involves a piece of paper for each train, it meets the goal of purposeful movement of goods or people.

Passenger service

In the golden era of passenger train travel, each car moved on a schedule/routing unique to the car. Pullman set the routing for sleepers, REA (Railway Express Agency) for head-end express service, and the Postal Service for RPO and mail storage cars. The carrying railroad specified the routing for all other cars.

Handwritten switch lists are the easiest way to emulate this routing. For a modeler interested in the details of passenger operation in the model world, see Chapter 5 of *A Compendium of Operations*. I use manually prepared switch lists (see [2] for an example) over and over again on my Ontario Midland.



Crown Point switch list/consist**Train: CN 57 the National (Niagara section)**

Arriving and terminating: 12:05 Track 2 Loco CN 6537

RR	Type	Car	To/From
CN	Baggage	8993	To north Station Track
CN	Coach	5437	To CN 7
CN	Diner		To CN 7
CN	Sleeper	Greenway	To CN 7

2. Switch lists like this one guide the Crown Point depot switch crew in their passenger car switching duties.

MORE GENERAL USE OF MANUALLY DEVELOPED SWITCH LISTS

Mike Hamer developed manual switch lists for a few trains for operations on his B&M (see Part 2) such that cuts of cars dropped in North Dover eventually make their way back to the same train. Because this circuitous movement of the same few cars became monotonous, Mike eventually developed additional switch lists and combinations so that every one of his 150 cars eventually finds its way into North Dover and back out again.

Mike's switch lists have worked well for about 500 ops sessions over the years. Building switch lists incrementally was not a big chore, and since Mike reuses them from session to session, the railroad is always ready to operate without onerous paperwork.

5a

THE BOSTON AND MAINE RAILWAY COMPANY

SWITCHING ORDERS

Location: N. Dover Date: May 27/58

Car Initials/Number	Track Number and Destination
Assist train #11 "The Kennebec" with milk car drop	MEC passenger
BFIX	522
Spot car to Marshall Creamery	

3. An example of Mike Hamer's switch list, this one for MEC #11, The Kennebec.

MORE COMPLEX SCHEMES

The schemes mentioned so far require minimal paperwork, though they sacrifice some realism. Some modelers may want a more realistic approach.

Car cards, waybills or computer-generated switch lists are two options to add realism. although they may add complication and undesirable "side effects."

For some layouts, such as Bruce Chandler's Jackson and Burke we saw earlier, a fleet of only about 30 cars make a simplified computer generated switch list easy to manage. Most modelers

have larger and more complex empires, and the complication grows with size. We will discuss these approaches more in Part 5.

HOW MUCH SWITCHING CAN AN OPERATOR PERFORM IN AN OPS SESSION?

Many modelers are optimistic in their estimate of how much switching one operator can handle in a given session. There is a balance between having operators standing around for lack of work and having them feel rushed to complete assignments.

I have found that an experienced operator, working steadily, can make about 20 moves (lifts plus drops) in an hour. Fifteen moves per hour per operator, or 40 moves in a three-hour session, would be a good starting point for planning.

HOW MUCH ROLLING STOCK IS NEEDED?

Many modelers have closets full of rolling stock and display cabinets full of locomotives. Avoid the temptation to jam the layouts with cars, and use sidings for storage. A good rule of thumb is to plan for enough cars to fill about 1/3 of available yard and siding space.

Over time, you might decide that more cars would improve operating sessions. I recommend limiting the number of freight cars to less than half of available track space.

CONCLUSION

A modeler can usually portray an operating plan as a single list of trains that run in a sequence. A short story line for each train enhances the portrayal and informs the operator more fully of his role, and a car-forwarding mechanism sets out the specific tasks to accomplish. With these, you can take on the challenging task of bringing your railroad to life in the general manner you envisioned. ✓

DOUG MATHESON



Doug authored a chapter in the OpSIG (Operations Special Interest Group) publication, *A Compendium of Model Railroad Operations*.

Doug has been participating in ops sessions for decades. He has also presented NMRA clinics on ops, organized ops sessions for a number of owners of large model railroads, and served on a model railroad as a dispatcher using Timetable and Train Orders,

and on another layout using the Occupancy Control System (Canada's version of Track Warrants). These all fit into the more heavyweight category of prototype-based operations.

At the same time, Doug has built and operates a very modest HO scale layout. He has also long modeled in Fn3 in the garden, including running live steam.

Doug thanks Bruce Chandler for his help in allowing his Jackson and Burke RR to be used as an example and inspiration for this article. N scale modeler Mike Dawson provided insightful comments on operations in a scale where reporting marks are difficult to read. A big thanks also to a number of Doug's fellow members of the NMRA (Niagara Frontier – St Lawrence Division) who offered many suggestions and edits along the way. These include Alex Binkley, Mike Hamer, Chris Lyon, and Peter Nesbitt. In particular, Mike Hamer also allowed his Boston and Maine RR to serve as an example.

Besides operations, Doug's other railroading interests include the history of passenger travel by rail, and the historical development of signaling systems.

Doug retired from Canada's federal public service and lives in a rural area south of Ottawa, Ontario. ■





Model Railroad Hobbyist | March 2021

JOE FUGATE PROPOSES A WAY TO TRACK YOUR OPERATING CREW SENIORITY ...



OVER THE YEARS ON MY SISKIYOU LINE 1, I explored a few “rules enhancements” to spice up an op session. One such system I considered I called my Seniority Rules system.

I reasoned that real railroaders build up seniority on the job so why not add something like that to my layout op sessions? And maybe that would add an incentive for folks to attend more op sessions and to be more aggressive in seeking op session tasks.

I never actually implemented this system, but I present it here as a proposal for others to refine and experiment with.

This system defines the role of each participant in a Siskiyou Line operating session. Seniority points get assigned or deducted based on completed assignments and rule violations. Keep in mind we’re doing this all in fun!

1. Just having ops crew members standing around doesn’t make for the most fun operating session. On my Siskiyou Line 1 layout shown here, I considered ways to “up the ante” during an operating session to encourage the crew to be more aggressive in pursuing op session tasks. Crew seniority tracking is one system I considered.

SENIORITY POINTS

I outlined five seniority point levels for job assignments:

- 000-099 — Green / Trainee
- 100-199 — Switchman / Rookie engineer
- 200-299 — Seasoned engineer
- 300-399 — Conductor
- 400 or more — Foreman / Mentor

These point ranges define your “experience level” and “job rating” for the purposes of what layout assignments you can take on. You gain points by successfully completing various operating session tasks successfully. If you make mistakes, you can still get points, but they may be reduced by demerit points.

JOB ASSIGNMENTS

Job assignments can be chosen based on seniority level points accumulated. Operators can take any job they have the seniority points to hold.

Crew members with a higher seniority have the first choice of an assignment when competing for the same assignment.

- 000-099 — Yard switchman (assist the Yardmaster).
- 100-199 — Engineer on through trains or in yard, crew on local trains.
- 200-299 — Conductor on through trains, engineer on local trains.
- 300-399 — Engineer/conductor on all trains, helper engineer.
- 400 or more Yardmaster, dispatcher, crew caller, or choice of assignment. Can also “qualify” Green crew members for a through train crew assignment.



2. I designed my Seniority rules to help crew members engage more and to remind everyone that not being attentive on a real railroad can lead to serious consequences. Hopefully this would add a bit more realism to the assignments, yet remain fun.

Note someone with the Foreman level (400+) can “temporarily promote” a crew member for any assignment up to 100 points above their level if the session is short-handed.

However, any demerits the “temporarily promoted” crew member gets will be doubled. So pay attention, real trains can be dangerous if you don’t stay attentive!

Alternatively, through trains can have just an engineer/conductor (300-399), with the extra crew position left unfilled if no one is available.

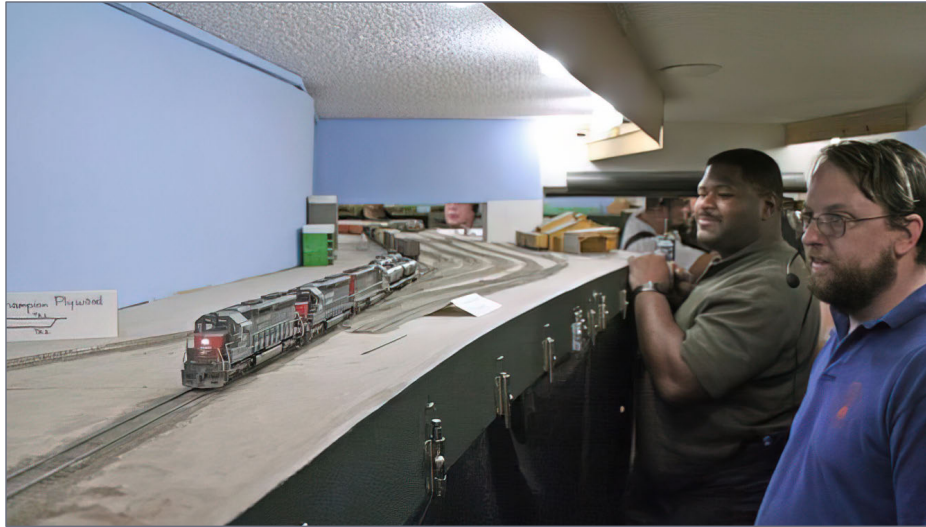
Local trains must always have two crew members or the train is annulled this session.

HOW TO GET SENIORITY POINTS

Seniority points get awarded for the successful completion of these job assignments:

- +100 — Complete first green crew assignment successfully.
- +75 — Complete “temporary promotion” crew assignment successfully.
- +50 — Each yard assignment completed successfully.
- +50 — Each through train assignment completed successfully.
- +50 — Each local train assignment completed successfully.





3. Had I implemented my Seniority Rules, it would have been interesting to see if it would have added an incentive for guest operators to come back and earn more seniority points. There's nothing like some "gamification" to add to the challenge if your layout ops sessions seem to be getting too routine!

DEMERITS

Here's where things started to get dicey. The main reason I never implemented my seniority points system is because I was concerned guest operators would be put off by the possibility of getting demerits.

It's hard enough to get folks to attend an op session, but to be called on the carpet for a boo-boo could be very off-putting. If I could make it clear demerits are all in fun, then it might work.

I recently realized I could have made it so only those with 100 or above in seniority points get demerits – in other words, green crew / trainees are expected to make mistakes!

Demerits get deducted for inattentive behavior and rules violations. The person or persons serving the named role(s) in brackets get the demerits.

Remember this is all in fun and intended to just remind us real railroading can be a risky business if you're not careful!

Demerits for various violations include:

- 10 — Delay another train by more than 30 fast minutes (5 actual minutes) [conductor]
- 10 — Negligent derailment [crew] or entering turnout with points thrown against you [engineer]
- 10 — Speed violation [engineer]
- 50 — Failure to heed dispatcher or yardmaster orders [engineer or conductor]
- 50 — Major derailment due to negligence (not due to equipment/track failure) [conductor, engineer, crew]
- 100 — Major accident that in real life would likely result in a "fatality" (judgment of the injured party) [conductor, engineer, crew]

ADDITIONAL NOTES

A yard switchman assists the yardmaster by throwing turnouts.

Conductor (300+) gets choice of assignment: Can be engineer/conductor or crew/conductor.

Through trains with Engineer (200-299) ordinarily must also have a crew/conductor (300-399).

Green crew members (0-99) on through trains can only act as brakeman for the train and throw turnouts, they cannot be an

WHAT ABOUT LAYOUT CREW SENIORITY? | 7

4. At the end of the day, I believe an op session must first be about having a good time. If the seniority system can be set up such that it's all in good fun, then that's what really matters.



engineer unless the train is also staffed by a Foreman level member (400+).

FINAL THOUGHTS

As I mentioned, I never actually implemented this seniority system, however, I may explore using it on Siskiyou Line 2 with the proviso that green / trainee crew members don't get demerits unless they first agree that it's okay and all in fun. If you'd like to try it out or use this as a starting point for your own seniority system, please do so.

Tell us about how it goes! ☒

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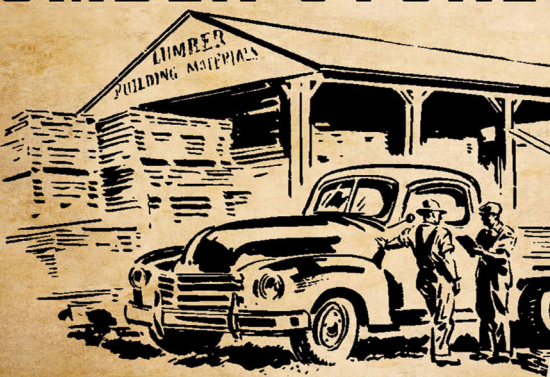
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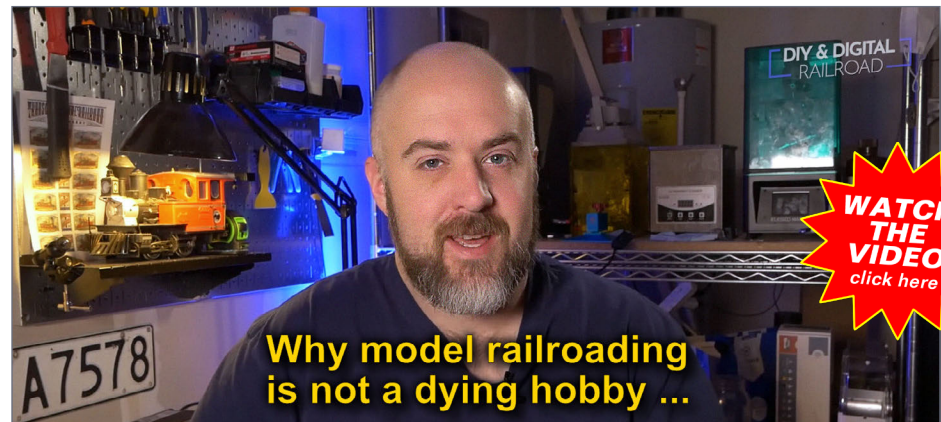
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Why model railroading is not a dying hobby ...

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Why the hobby is not dying

In a departure this month from a cool how-to video, we're doing a bit of hobby philosophy. YouTube modeler *DIY and Digital Railroad* lays out why the hobby of model railroading is not dying, using some very well-reasoned points.

Give this video a watch and see if he brings up some things you may not have considered. We agree with his points and appreciate DIY Jimmy's upbeat outlook! ✓



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MARCH NEWS

column



Model Railroad Hobbyist | March 2021

RICHARD BALE AND JEFF SHULTZ
REPORT THE LATEST HOBBY
INDUSTRY NEWS ...



**VIEW READER
COMMENTS**

IN MEMORIAM

Charles F. Ro, Sr. 1932-2020



Charles Ro, founder of Charles Ro Supply Co. and USA Trains, died December 1, 2020. He was 88 years old. Beginning in 1972, Mr. Ro turned his train collecting hobby into a part-time retail business that steadily expanded over the years to eventually become recognized as the world's largest Lionel Train dealer. The company currently occupies a 50,000 square foot building in Malden, MA. In 1987 Ro established USA Trains, a line of G scale models based on American prototypes. Charles Ro, Sr., served as a U. S. Marine during the Korean War.

INDUSTRY NEWS

Future of MTH HO and S scale tooling updated

After **ScaleTrains.com** announced it had purchased all of MTH's HO and S scale tooling, the Tennessee-based company

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS



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was flooded with inquiries about when new releases would be forthcoming and how they would or should differ from the original MTH products. In response, Shane Wilson, president of ScaleTrains.com, issued the following statement:

"We are designing and tooling new motor mounts so the (MTH) locomotives can use our motor. We're also designing a new main board so we can utilize ESU-LokSound DCC & sound. We have no plans to extensively rework the external details of current MTH HO and S models. We've received feedback about potential dimensional and detail issues with specific products and will take the information under advisement. If the issue can be fixed with a limited amount of time and money, we may make the investment. If the issue cannot be resolved easily, we may continue with the model as is or retire it.

Our team was a part of the GP7/9 and ES44 tooling acquisitions at our previous (Athearn) employer and we know how much time and money it cost to bring these models into the Genesis line. Starting from scratch would have been less time consuming and less expensive.

If there is a current model in the MTH HO line-up that does not meet our Rivet Counter or Museum Quality standard and we believe there is a market in the Rivet Counter or Museum Quality lines, we'll start the project from square one.

MTH has designed and engineered several steam era locomotives, freight cars, and passenger cars that are yet to be tooled. Over the next several years, we'll bring many of these projects to market. Since they are designed and not tooled, we will ensure they meet Rivet Counter or Museum Quality specifications. Thank you. SW."

NEW PRODUCTS FOR ALL SCALES

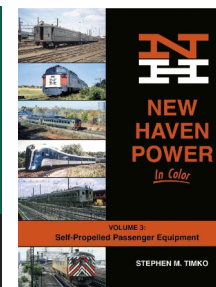
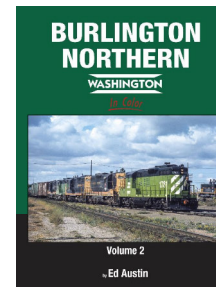
Bachmann's new 2021 catalog is now available on line. The 320 page catalog covers Spectrum and standard-line locomotives, rolling stock, scenery, and accessories in HO, N,

On30, and large scale including Williams by Bachmann O Gauge line. The catalog may be viewed at resources.bachmanntrains.com/bachmann2021/html5/index.html.



Digitrax is now shipping its new compact UT6 utility throttle that is compatible with LocoNet Systems. The UT6 features a 1.5" color LCD display screen, 2- or 4-digit locomotive decoder access, over 9,000 loco addresses, 29 functions, infrared operation with UR90/91/92, and over 2,000 turnout decoder addresses.

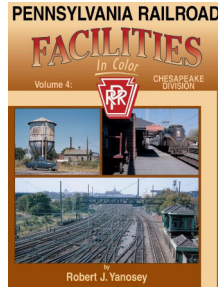
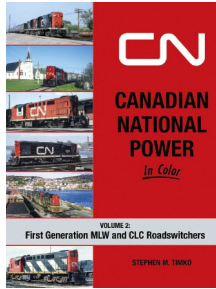
Also available now is Digitrax UT6D duplex radio utility throttle with all of the same features as the UT6 plus duplex wireless function with UR93/92 and duplex scanner and duplex settings editor. For additional information contact a dealer or visit www.digitrax.com.



New publications from **Morning Sun** include Volume 2 of *Burlington Northern in Washington*. Author Ed Austin covers BN in Washington State as the conglomerate juggles a rainbow of colorful diesels of the Great Northern, Northern

Pacific, Chicago, Burlington & Quincy; and Spokane, Portland & Seattle.

Also new is Volume 3 of *New Haven Power in Color* by Stephen Timko. This volume documents the New Haven's self-propelled passenger equipment, electric and diesel, as well as Mack railbus models, RDCs, the diverse fleet of electric MU equipment, and the DOT Turbo era are all featured.

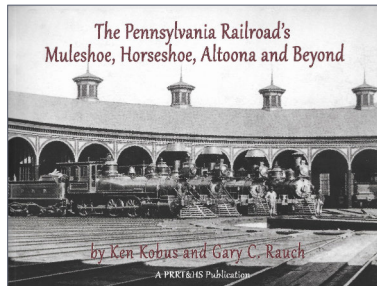


Additional new books from Morning Sun include *Canadian National Power and Volume 4 of Pennsylvania Railroad Facilities*. The CN book reviews the first generation of MLW and CLC road switcher fleet including CLC H12-64, H16-44 and the

lone H24-66, as well as MLW models RSC-13, -14, and -24, RS-3, -10, and -18. The TEMPO RS-18 is given special attention.

The PRR's Chesapeake Division included the southern end of the road's heavy-duty main line as well as the rural character (and float bridges) on the popular Delmarva branch. Volume 4 documents all of this as well as facilities and trains of Pennsy's Wilmington-Washington main line. For additional information contact a dealer or visit www.morningsunbooks.com.

The **New York Central System Historical Society** has announced the creation of a second-generation archive system as a resource for model railroaders and railroad historians. Containing over 58,000 images, the archive will serve as the central resource for the society's collection of photos, maps, drawings, and track plans. The new archive is available at nychs.omeka.net, and additional information about the archive can be requested from archive@nycshs.org.



The Pennsylvania Railroad Technical & Historical Society has published *The Pennsylvania's Muleshoe, Horseshoe, Altoona and Beyond*, by Ken Kobus and Gary C. Rauch. Covering a period beginning in the 1850s through the 1970s, the book explores the development of

the Pennsylvania Railroad along the east slope of the Allegheny Front. Included area coverage of the Alternate Corridor west from Petersburg to Gallitzin, Cresson and the Pittsburgh Division main line including Horseshoe Curve, and the Altoona Yard complex. Presented in landscape format, the softcover book includes over 200 illustrations, some in color, within its 148 pages. It is available at the PRRT&HS website at www.prtrhs.org.

LARGE SCALE PRODUCT NEWS



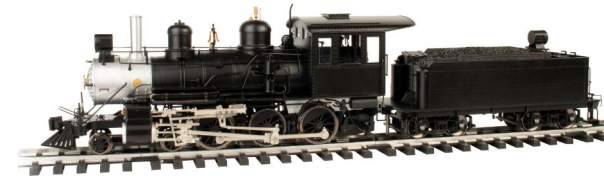
Bachmann has released four versions of a large scale 4-6-0 Ten-Wheeler steam locomotive with

metal gears. Additional features include an operating headlight, smoke unit, metal side rods, all metal handrails, and a new tender.



Locomotives in this release include DCC and sound-ready versions with factory installed

speakers and a nonproprietary plug-and-play circuit board to accommodate aftermarket control systems including conventional DC power, NMRA/NEM DCC, and/or RC operation.



Decorating schemes on the 4-6-0 include two for Denver & Rio Grande Western (Flying Grande and

Yellow Bumble Bee), black but unlettered, and a Christmas scheme.



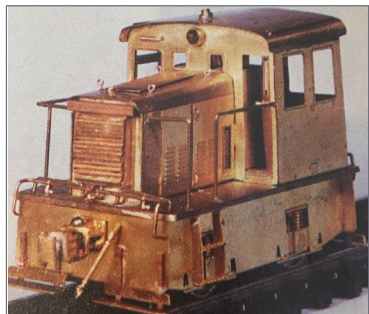
For additional information contact a dealer or visit www.bachmanntrains.com.

MULTIPLE SCALE PRODUCT NEWS



Adirondack Car Foundry is taking reservations on the Thousand Island Railway 500 in HO, S, O, and On30 scales. A one-of-a-kind centercab diesel locomotive, the 500 was rebuilt out of an electric locomotive by the CN-owned Oshawa Railway.

Classed as a 35-ton locomotive, it was powered by twin 125hp Waukesha gas engines, and was repowered in 1947 with twin 142hp Cummins diesel engines. It is currently on display in Gananoque, Ontario, Canada, where it had run for most of its life. The model will be equipped with DCC and sound.



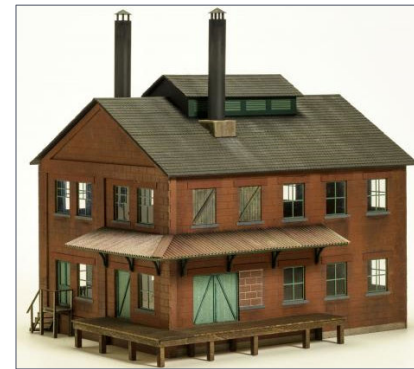
Also available for reservation is a brass GE 23-tonner in S, O, and On30 scales. The model will feature etched and investment cast brass construction, including DCC, sound, and a proprietary drive. For more information visit adirondackcarfoundry.square.site.

O SCALE PRODUCT NEWS



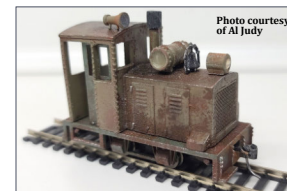
3rd Rail **Sunset Models** is selling an O scale Southern Pacific 0-6-0 class S-12 switcher. The hand-crafted brass model is a highly accurate replica of a

prototype locomotive SP built in its Sacramento Shops in the 1920s. For complete details contact a dealer or visit www.3rdrail.com.



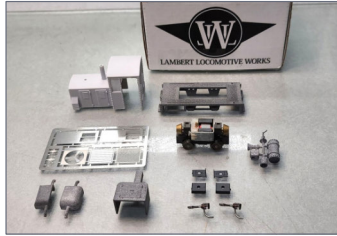
Brennan's Model Railroad has released a laser-cut kit for Richmond Packing Co. This is the third in a series of O scale structures Denis Brennan has issued in his Frank Ellison Tribute series. The kit is composed of laser-cut tempered hardboard walls, basswood freight dock, doors, windows, and stairs; and peel-and-stick

shingles. The assembled building has a footprint of 10.125" x 12.5" including the wrap around loading dock. Illustrated assembly instructions, including painting and weathering suggestions, are included. For additional information visit brennansmodelrr.com.



Lambert Locomotive Works has released Type W1, a new kit for an On30 Critter. Major components of the limited-edition kit include a resin cast body, a sheet of etched metal parts, Kadee couplers, a 4-wheel power chassis, and

nylon printed frame plate, fuel tanks, cab doghouse, and parts sprue.



Downloadable instructions are included with the purchase. For additional details including availability visit lambertlocomotiveworks.com/type-w1-critter.

S SCALE PRODUCT NEWS

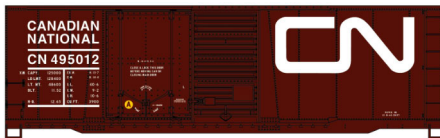


Motrak Models has released the Weeks Mills Freight House kit in S scale. Replicating a freight house on the Wiscasset, Waterville & Farmington Railroad, the kit's dimensions are 8.5" x 4.5" and it is constructed of laser-cut wood, windows, shake shingles, and subfloor. Also included are barrels and laser-cut crates. For more information visit motrakmodelsusa.com.

HO SCALE PRODUCT NEWS

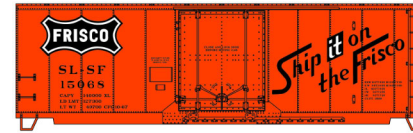


New HO scale kits from **Accurail** include this Chicago & North Western ACF twin-bay 2780 cu. ft. CenterFlow covered hopper car.



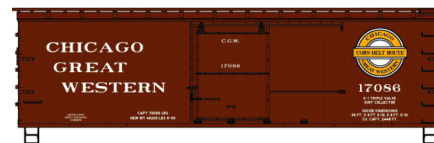
Also just released is a kit for a Canadian National 40' steel boxcar with a combination of a plug and sliding doors. The HO

scale model is based on a prototype built in November 1952.



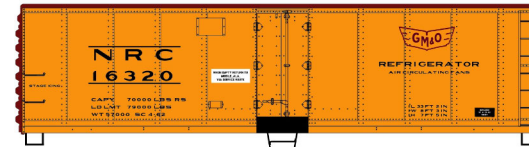
entered service in 1967.

Accurail's kit for this HO scale St. Louis-San Francisco 40' insulated steel boxcar represents a real Frisco car that



This Chicago Great Western 36' double-sheathed wood boxcar was built with a steel roof, wood ends, a fishbelly underframe, and

National sliding doors. The decorating scheme features a CGW Corn Belt Route herald.



This Gulf Mobile & Ohio Northern Refrigerator represents a 40' steel refrigerator car with air circulating fans and

reefer 4 ft hinged swing doors.

Quebec Central built 1913 rebuilt 1951.

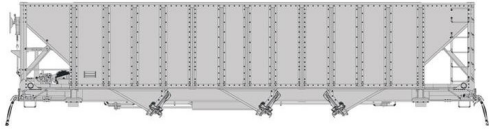


Grand Trunk, built 1917.



Pacific Great Eastern built 1914 rebuilt in 1941. A 36' Fowler Wood Boxcar 3-car set features the above three boxcars. For additional information contact a dealer or visit www.accurail.com.





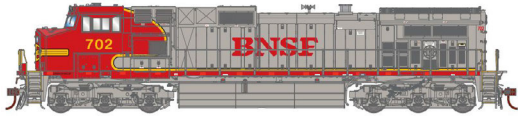
Arrowhead Models is selling undecorated kits for its highly regarded Committee Design triple-

bay hopper cars. The prototype emerged from a committee formed in the late 1950s by Pennsylvania Railroad, Chesapeake & Ohio, and Norfolk & Western. Arrowhead's HO scale model accurately replicates the prototype design of a 70-ton car with 13 posts. The interior length of the car is 39' 19". Assembling this challenging kit is eased by the 35-page illustrated instructions that accompany it. For additional information visit www.arrowheadmodels.com.



Athearn has upgraded the tooling of its Dash 9-44CW diesel locomotive to Genesis

2.0 and will release its first run in March 2022. Road names for the Dash 9 will include ATSF units as delivered in 1994 with Santa Fe's unique pilot plow and trucks.



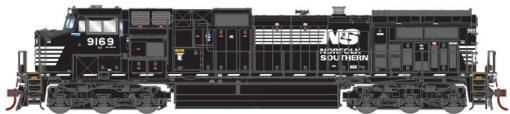
BNSF Dash 9s in War Bonnet paint represent some of the earliest examples of BNSF

utilizing Santa Fe's legendary livery. Note the variations in lettering and the cigar band nose band.



Two road numbers will be available for Canadian National Dash 9s featuring teardrop cab windows, and

Canadian ribbed anticlimbers.



Athearn's Norfolk Southern version of the Dash 9s represent units

acquired between 1995 and 2005, some of which are still in service.



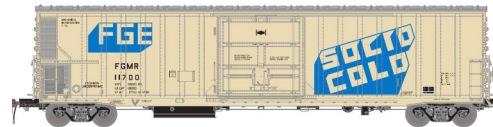
Southern Pacific Dash 9-44CW locomotives will be available in their as delivered 1993-94 factory-fresh paint scheme.

Athearn has included Dash 9s decorated for Australia's FMG-Fortescue Metals Group in the March 2022 production run.



Genesis2 features on all Dash9-44CW in this run include illuminated number boards and

ground lights. The models will be available for DCC operation with an onboard SoundTraxx Tsunami2 sound decoder. DC models will feature Quick Plug technology with a 21-pin NEM connector for installation of an aftermarket DCC decoder.



A new run of Genesis FGE 57' mechanical reefers is included in Athearn's March 2022 production schedule.

The HO scale models will be

available with or without a DCC driven sound decoder.

Road names will include three Burlington Northern cars including two in prime for grime and one in factory fresh as delivered paint. Additional road names include Fruit Growers Express, Frisco, BNSF with Western Fruit Express logo, Santa Fe leasing, three SFLC cars in Solid Cold schemes, and two Union Pacific/ARMN reefers.



Athearn has included 85' TOFC flat cars in its March 2022 release. The HO scale models will have trailer hitches, wire grab

irons, and swing-mount coupler boxes. These long cars require a minimum track radius of 22". Road names will be Santa Fe, Denver & Rio Grande Western, Trailer Train, Rock Island, Pacific Fruit Express, and Soo Line.



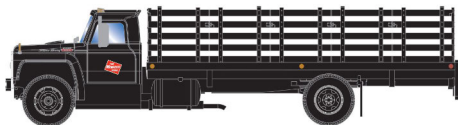
Fruehauf 45' Z-van trailers decorated for Santa Fe, Availco, Southern Pacific, Milwaukee Road, Denver & Rio Grande Western, Boston

& Maine, and Conrail are scheduled for release next March. Features on Athearn's 1:87 scale trailers include rubber tires and individual mud flaps. Variables per the practice of the prototype name include two or four door-rods and wheeled or shoe-style landing gear.



Athearn will offer its 40' modernized boxcar singly and in 3-packs with different road numbers. The models are scheduled for release next

March. Road names will be Southern Pacific, Rock Island, North Stratford Railroad, Louisville Nashville, Missouri-Kansas-Texas, Penn Central, and Gulf, Mobile & Ohio.



A Ford F-850 truck with a stake body is included in Athearn's March 2022 production schedule.

Decorating schemes for the 1:87 scale vehicle will be Union Pacific, Denver & Rio Grande Western, Milwaukee Road, Baltimore & Ohio, Chicago & North Western, Canadian National, and Conrail. Features will include rubber tires and clear window glazing.



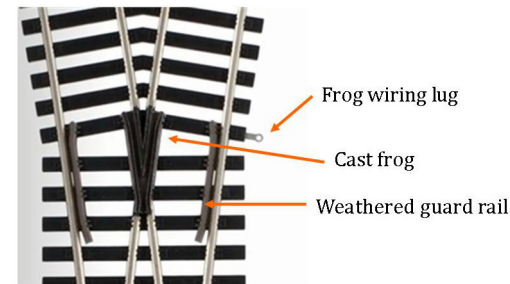
New HO scale models coming next March from the Roundhouse Division of

Athearn include an ACF 5250 cu. ft. hopper car. Road names will be ADM Milling, Santa Fe, Seaboard Coast Line, Kodak, Plexiglas, Union Pacific, and Western Pacific.



A Roundhouse 40' steel gondola is also in the March 2022 release.

Decorating schemes will be Burlington Northern, Seaboard Coast Line, Southern Pacific, Southern Railway, Texas & Northern, Norfolk Western. Both Roundhouse models will come with appropriate trucks with 33" machined metal wheelsets. For additional information on Athearn or Roundhouse products contact a dealer or visit www.athearn.com.



Atlas has announced important upgrade to its line of HO scale code 100 turnouts. The new series, identified as the Mark V Customline, incorporates several important improvements over the

current Mark IV series that was introduced some 20 years ago. The new Mark V design features tighter tolerances throughout the turnout to match applicable NMRA Standards and Recommended Practices. The guard rails are cast as a separate part which allows them to be molded in a color that represents weathered rail. To make it easier to power the cast metal frog, a small wiring lug is positioned at the end of one of the ties. Atlas' new Customline Mark V series includes a wye turnout and number 4 and number 6 right- and left-hand turnouts. A video describing the new turnouts is available at www.youtube.com/watch?v=w3BfS6kjHCQ&mc_cid=ffa5fb418f&mc_eid=6bff0ec9ce.



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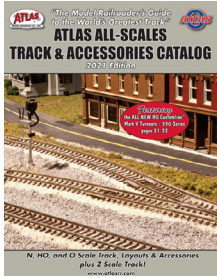
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Atlas' complete line of N, HO, O, & Z scale track and accessories, including the new Mark V turnouts, are detailed in the 2021 edition of the Atlas All Scales Track Catalog. This 144-page catalog will be available in March at Atlas authorized dealers or direct from Atlas. For more information visit www.atlasrr.com.



The newest HO scale steam locomotive from **Bachmann** is a classic 0-6-0 switcher. The model is based on a design

established by the United States Railroad Administration during World War I. Locomotives with a standard USRA tender are available for New York Central, Boston & Maine, and Western Pacific.



Road names for locomotives with a Vanderbilt tender include Great Northern and Union Pacific.



Included in this release is a Santa Fe locomotive with a slope back tender. All versions feature an operating headlight and smoke unit.



Bachmann has added several new road names to its broad selection of HO scale cabooses.



A steel caboose with offset cupola is available decorated for Chicago, Burlington & Quincy; Wabash, and Grand Trunk.



New road names for Bachmann's HO scale bay-window caboose include Santa Fe, Delaware & Hudson, and Louisville & Nashville.



A Northeast-style steel caboose with a centered cupola is available now, decorated for Penn Central, Conrail, and Western Maryland.



New road names for Bachmann's 36' caboose with a wide-vision cupola include Denver & Rio Grande Western, Chessie, and Erie Lackawanna.



All of the models mentioned in this report feature Celcon trucks with blackened metal wheels and non-magnetic blackened brass axles.

Completing Bachmann's wide assortment of HO scale cabooses is a classic 4-wheel wood-sheathed bobber type decorated for



Lehigh Valley, Southern Railway, and Denver & Rio Grande Western.



For more information contact a dealer or visit www.bachmanntrains.com.

ALCO RS-3 ROAD SWITCHER



R. Bale

The American Locomotive Company introduced the 1,600hp RS-3 road switcher locomotive in May 1950. Designed specifically to compete with EMD's GP7, the RS-3 would become the most commonly seen Alco locomotive across the country. Schenectady-based Alco and its Canadian counterpart, Montreal Locomotive Works, built 1363 of these versatile locomotives before production ended in late 1956. Spotting features of the familiar and reliable RS-3 included pronounced rounding at the corners on the cab and long, low hoods, giving the locomotive a more streamlined appearance than its RS-1 predecessor. The radiator-fan housing was also rounded. The short hood could accommodate a steam generator. Because of this option, and the RS-3's good looks, some railroads elected to employ theirs in passenger/commuter service.

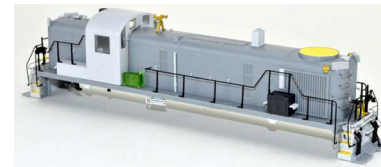


RATE THIS ARTICLE



Bowser expects to begin production of an all-new Alco RS-3 Phase 3 road switcher next month. Availability of finished models will be mid-summer. The HO scale model is the

culmination of a project that began some seven years ago when Bowser's development team measured a prototype at the Rochester & Genesee Valley Railroad Museum. Since then, several other prototypes with varying degrees of road name modification have been measured. To model the variations accurately, Bowser has prepared tooling for 22 versions of the Phase 3 RS-3. A video showing the tooling and molding operation for one style of cab is available at bowser-trains.com/docs/RS/BOWSER%20-%20RS3%20Molding%20Video.mp4.



In addition to all the road name and road number variables, features common to all versions of the ready-to-run HO scale model include individual air hoses,

windshield wipers, individual grab irons, coupler lift bars, operating headlight, and window glass.

Road names on the initial release will be Boston & Maine, Central Vermont, Delaware & Hudson, Erie Lackawanna, Grand Trunk, Green Bay & Western, Louisville & Nashville, Milwaukee Road, Nickel Plate Road, Northern Pacific, Norfolk & Western, Pennsylvania, Spokane, Portland & Seattle; and Western Maryland.



DC versions of the model will have a 21-pin plug for installation of an aftermarket decoder. DCC models will have a factory installed LokSound Select decoder.



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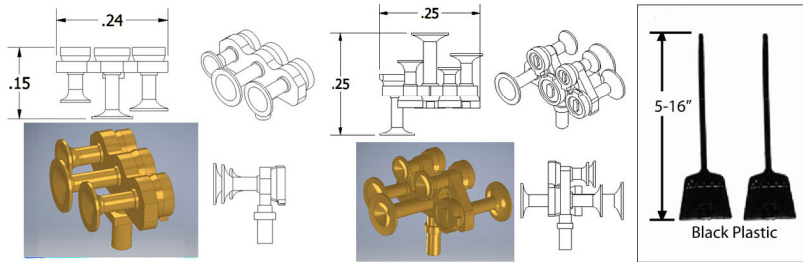
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Bowser has also announced several new items in its Cal Scale details line. New cast brass Nathan Air Horns are available, including the M3H, M3, M3HR2, M3HR4, M3R1, M3R2, M5H, M5R2, M5R24, and M5R4. Also available are sweep brooms, available in black plastic. For additional information contact a dealer or visit www.bowser-trains.com.



R. Bale

2-8-0 CONSOLIDATION

Baldwin Locomotive Works built the first 2-8-0 steam locomotive in 1866. Dubbed Consolidation, its eight drivers offered more adhesion than previous six-coupled engines, and the two-wheel pilot truck provided the stability that was lacking in 0-8-0s locomotive types then in use for heavy freight. From the 1880s to about 1910 the 2-8-0 Consolidation was the locomotive of choice for freight service. Although the majority of 2-8-0s became branch line engines after the development of freight locomotives with trailing trucks, builders continued to produce 2-8-0s through the 1920s. In total, about 21,000 Consolidations were built, more than any other wheel arrangement.



RATE THIS ARTICLE



Broadway Limited has completed another release of its popular 2-8-0 Consolidation steam locomotive. This production run features Paragon3 Sound and

Operation System with Rolling Thunder Sound in both DC and DCC environments.



The HO scale locomotive is equipped with traction tires and can negotiate a minimum

track radius of 18". The power chassis and super-structure of the locomotive are diecast. The tender is composed of an ABS body with a diecast underframe.



Road names are Santa Fe, Chicago & North Western, Duluth, Missabe & Iron Range; Denver & Rio Grande Western, New York, Ontario & Western; Chicago, Burlington &

Quincy; Chesapeake & Ohio, Great Northern, Maine Central, Southern Pacific, Pere Marquette, Southern Railway, Union Pacific, Western Maryland, and Western Pacific. A painted but unlettered version is also available.



For additional information contact a dealer or visit www.broadway-limited.com.



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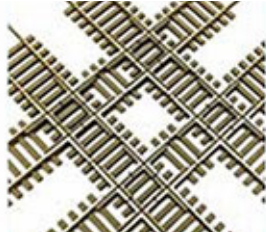
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Fast Tracks has introduced a new selection of kits that simplify building precision track crossings. Named Diamond Line, the initial kit is for an HO scale 90-degree crossing. Single and double crossings in other degrees in both HO and N scale are under development.

The kits include nickel silver castings which are pressed and glued in place into pre-cut precision laser-cut ties. Pockets in the casting allow for matching rail to be simply slid into position for soldering in place. Track gauging and electrical gapping are automatic. Each kit includes individual frog and guard rail castings, matching laser-cut ties, Copperhead PC board ties to anchor the rail in place, and sufficient rail to build one crossing. Additional items in each kit include 320 and 600 grit sanding blocks and a steel wire brush to polish the raw castings. For additional information visit www.handlaidtrack.com/whats-new.

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R. Bale

PENNSYLVANIA RAILROAD WELL CAR

The class F25 flat car was the basis of the Pennsylvania Railroad's well-car fleet. Two massive, riveted cars were built in PRR's Altoona Car Shops in 1916, with 25 more being completed the following year. The 70-ton load limit of the original F25 cars was later upgraded to 95-tons. Due to their limited use in specialized service, the original 27 F25 well-flat cars lasted into the early Penn Central period of 1968.



Funaro & Camerlengo is selling a craftsman style resin kit for a prototypically accurate HO scale model of a

Pennsylvania Railroad F25 well car. The kit includes a one-piece cast resin body, detail components, heavy duty PRR Crown truck frames, decals, and assembly instructions. Wheelsets and couplers are not included. For additional information visit www.fandckits.com.



InterMountain plans to release its latest HO scale versions of GE ET44 Tier 4 locomotives this month. Six new road numbers will be available for BNSF,

Canadian National, and Union Pacific.

Lighting on the HO scale ready-to-run models includes front and rear headlights, front and rear ditch lights, number boards, and front and rear walkway lights. The CN locomotive will have front and rear red DPU lights. Additional features



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include accurate GE style traction motor detail on the 3rd and 4th axles, spinning bearing caps on all six axles, see-through etched metal grilles on the radiator cab

roof, dynamic brake area, and body; etched metal walkway steps, and PTC antenna arrays on cab roof.



Sound locomotives will be equipped with ESU® LokSound® 5 DCC sound decoders and dual sugar-cube speakers. Non-sound locomotives will have an

ESU® LokPilot® V4.0 non-sound decoder. For additional information contact a dealer or visit www.intermountain-railway.com.



The newest HO scale freight car model from **Kadee** is a 40' PS-1 boxcar decorated for SSW - St. Louis Southwestern Railway. The HO scale ready-to-run model

replicates a prototype car built in 1954 with 8' Youngstown sliding doors. The roof and ends are painted black and the right side of the car features a herald for the Cotton Belt Route and a Blue Streak Fast Freight slogan.

Kadee models come with Kadee metal couplers and self-centering trucks. For more information contact a dealer or visit www.kadee.com.

KatoUSA has added a Chicago & North Western cab-coach to its selection of Pullman four-window bi-level commuter cars. Previous releases included cars decorated for Amtrak Phase III,



Chicago RTA, Rock Island, and Chicago Metra.



A second Chicago Metra Cab-Coach has been added to Kato's line up of bi-level cars as well as coaches decorated for Metra and C&NW.



Kato's HO scale cab-coaches are equipped with switchable headlights. An interior lighting kit is available as a separate

purchase. The HO scale models come with Kato's Kinematic Knuckle Couplers. A video is available (www.youtube.com/watch?v=So4TYXN5oRk) with instructions on converting the cars to Kadee couplers. For additional information contact a dealer or visit www.katousa.com.

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R. Bale

ACF 70-TON WAFFLE BOXCARS

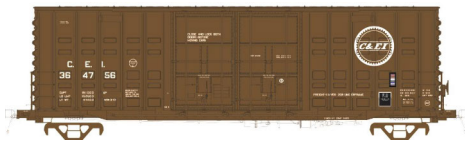
The American Car & Foundry waffle side boxcar evolved in 1973-74 from a basic 70-ton exterior post boxcar introduced by ACF in 1971. The exterior protrusions, or waffles, provided room inside the car to house specialty anchor fixtures needed to secure rolls of paperboard used in manufacturing cardboard boxes. The hi-cube height of the car was needed to accommodate various sizes of paper rolls stacked either one, two, or three high, depending on roll dimensions and customer requirements. The extended clearance for these cars pre-dated the Plate F introduction so they were stenciled with 'Exceeds Plate C'.



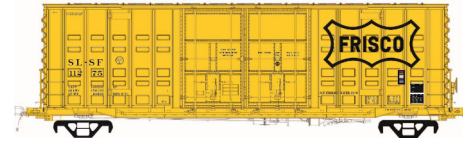
Moloco is taking reservations for an HO scale 50' ACF Hi-Cube waffle boxcar with double plug doors. Availability of the prototypically accurate model is planned for the third quarter of 2021.



Reservations for the ready-to-run model received by the deadline of March 20, 2021 will be assured of receiving delivery from this limited run.



Road names include Burlington Northern, Texas, Oklahoma & Eastern; Chicago & Eastern Illinois, and Frisco. An undecorated kit will also be available.



For additional information visit www.molocotrains.com.



R. Bale

BARREL ORE CARS

Beginning in 1967, National Steel Car built a series of covered pellet ore cars for Canadian National and Ontario Northland. The cars were designed specifically to deliver iron ore pellets from mines owned by Dominion Foundries and Steel Co. (Dofasco) in Northern Ontario to their mill facility in Hamilton. The closed design of the cylinder-shaped hopper cars was to keep the processed iron-ore pellets from freezing or becoming damp with excess moisture. The barrel cars had a device that resembled a tire on a shaft extending upwards from each of the loading hatches. As the cars moved through the loading area, a pair of elevated ramps, called "Scrolls," engaged the tires forcing the hatches open. It took about 60 seconds to fill each car. The initial design was for 35' cars which proved to cause excess wear on rails of the same length. Production of an improved 42' car began in 1973. It was not unusual to see both CN and ONR cars mixed in the same consist. In later years, CN converted a few barrel ore cars to scale test cars.



Rapido is booking advanced reservations for HO scale CN and ONR barrel ore cars. Both 35' and 42'

versions of the unusual enclosed ore car are being prepared.



Decorating schemes will include Canadian National 35' short barrel and 42' long barrel ore hopper cars in mineral brown.



Ontario Northland long barrel cars will be available in the road's blue and yellow chevron scheme. ONR short barrel cars will

be available in green. A short CN scale test car and undecorated models will also be available.



Features include full underbody and gate details, separate air and brake piping, see-through etched metal end

platforms, Kadee #158 couplers, and 100-ton Barber S-2 trucks with metal wheels. Rapido's HO scale closed barrel ore hoppers will be available singly and in three and six car packs with different car numbers. For additional information contact a dealer or visit www.rapidotrains.com.



Rusty Rail is selling a 1:87 scale cast resin model of a New England lobster boat.

Components include a 3D printed ship's wheel and anchor, and several lobster traps. The

boat is 6" x 2". The resin castings are unpainted. For additional information visit www.rustyrail.com.



Showcase Miniatures is selling a kit for a 1:87 scale GMC short-hood 9500 dump truck. The kit is composed of resin cast cab and dump bed, photo-etched details, and cast pewter wheels and tires. The windshield panels are laser-cut. A tractor and wrecker version are currently under

development. For additional information visit www.showcaseminatures.net.



R. Bale

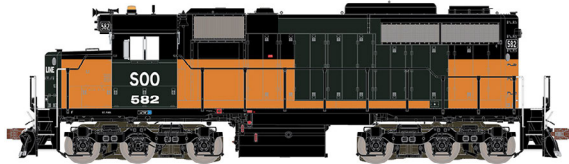
SDL39 DIESEL LOCOMOTIVE

The SDL39 diesel locomotive consisted of a group of just 10 road switchers Electro Motive Division built in 1969-72 for the Chicago, Milwaukee, St. Paul & Pacific Railroad. The prime mover was a turbocharged 2,300hp EMD 645E3 12-cylinder diesel engine. With a goal of achieving a relatively light weight locomotive to replace its small fleet of aging Alco RSC-2s, CMStp&P ordered SD39 units on a short 55' 2" frame and specified FlexiCoil-C trucks. The result was the SDL39, which wore a variety of liveries as their ownership changed due to mergers. In addition to the original Milwaukee Road scheme, one of which was wrecked, the nine surviving SDL39s were decorated for Soo Line, Wisconsin Central, and FEPASA - Ferrocarril del Pacífico, the freight division of the national railway of Chile.

ScaleTrains.com is preparing an HO scale version of EMD's SDL39 for release later this year. The SDL39 will be in ScaleTrains.com's Museum Quality series with exceptional detail and adherence to the prototype. Road name, road



configuration, step types, and up to 30 operating LEDs.



590 feature details of prototypes delivered in late 1972. The SDL39s wore a modified Soo Line paint following their acquisition in 1985.



Wisconsin Central upgraded the radio system and repainted their newly acquired SDL39s in 1995.



They were returned to the lessor who sold them to FEPASA in Chile. For additional information visit www.scaletrains.com.



Standard's 1973-1975 production of the popular prototype.

Tangent Scale Models has released a group of HO scale PS-2CD 4750 cu. ft. covered hoppers that accurately model the variations in Pullman-

The ready-to-run model is available in nine decorating schemes plus an undecorated kit.



versions of NAHX Ralston-Jefferson in pink.



Road names include ATSF class GA-191 as delivered in 1975, Minneapolis Northfield & Southern Railway painted as delivered in 1974, and two

Additional road names include PTLX Cooper Grain Colby, Kansas; PTLX Michigan Elevator Exchange in a 1973 scheme, and three variations (1974, 1992, and 2008) of PTLX Far-Mar cars.



Road and road number specific details include seven different brake systems, three different outlet gates, three styles of roof hatches, four jacking pad sets, two roof overhangs, three different running board and crossover platform options, and seven brake wheel housing and clevis options.

Common details on all versions of Tangent's PS-2CD 4750 include wire grab irons, etched metal running boards and

crossover platforms, Kadee couplers, and 100-ton Barber S-2 trucks with 33" machined metal wheels with rotating bearing caps. For more information visit www.tangentscalemodels.com.



R. Bale

NW2 DIESEL SWITCHER

Electro Motive Corporation introduced the NW2 diesel switch engine in late 1939. With a rating of 1,000hp, the NW2 was considered quite powerful for a locomotive that weighed only 124 tons and was just a little over 44' in length. EMC, and subsequently EMD, built 1145 of the popular NW2 before production ended in 1949. More than 50 North American railroads purchased the popular switcher. Many NW2s, readily identified by their dual conical exhaust stack, are still in service on short lines, light industrial applications, and tourist lines.



stacks, spotting features include the small front radiator grille, and large center cab windows.



Walthers has released an HO scale version of an EMD NW2 diesel switcher. The HO scale model represents a 1949 Phase V variation of the prototype. In addition to the twin exhaust

Available road names are Elgin, Joliet & Eastern; Union Railroad, and Indiana Harbor Belt which owned 78 of the prototype NW2s. An unlettered unit painted blue, and an undecorated model are also available.



Walthers HO scale NW2 is available for standard DC operation and with an ESU Sound and DCC decoder.



Walthers plans to release a group of 60' bulkhead flat cars next month. The Mainline model is based on a prototype with 8' 6"

low-profile bulkheads introduced by Pullman-Standard in the late 1960s. Walthers HO scale version rides on 70-ton roller-bearing trucks with 33" machined metal wheelsets. Road names will be Canadian National, Canadian Pacific, Indiana Harbor Belt, Weyerhaeuser, and three Trailer Train schemes. An undecorated model will also be available. For additional information contact a dealer or visit www.walthers.com.

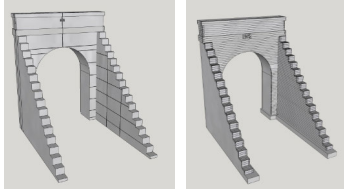


Willyma Hobbies is selling a craftsman-style resin kit for an HO scale 50' Boston & Maine wood milk car with

truss rods. The model represents a car as rebuilt in the 1950s. The kit, produced exclusively for Willyma by Funaro & Camerlengo, includes a one-piece resin body, appropriate trucks, decals, and assembly instructions. Wheels and couplers are not included. For additional information visit www.willymahobbies.com.

ZYX Creative is releasing two new Southern Pacific concrete tunnel portals in HO scale. The two portals replicate Shasta Tunnel #10 and Coos Bay Tunnel #15. 3D printed in high resolution resin, each portal features prototypical detail such





as fine parallel lines on a smooth face on the Shasta portal and raised board form detail and concrete foundation on the Coos Bay model. Build dates can be customized on all ZYX Creative portals, and integrated liners are

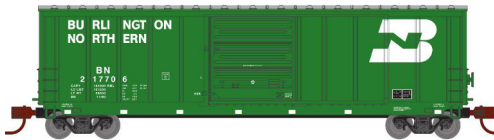
available separately. For more information visit www.zyxcreative.com/tunnels.

N SCALE PRODUCT NEWS



New N scale models coming from **Athearn** next March include an FGE 57' mechanical refrigerator car. The reefer

will be available with and without DCC powered sound. Road names will be BNSF, Fruit Growers Express, Frisco, and three Burlington Northern schemes including one in Primed for Grime weathered paint.



Athearn has included a 50' PS 5277 cu. ft. Boxcar in its March 2022 production schedule. Road names for the N scale model will be Santa

Fe, Canadian National, First Coast Railroad, Railbox, Burlington Northern, and Southern Railway. For additional information contact a dealer or visit www.athearn.com.



R. Bale

EMD GP20 LOCOMOTIVE

Except for the short, square turbocharger stack and the flared radiator fans, the EMD GP20 is virtually identical in appearance to a late GP9. Following successful turbocharging experiments with nine Union Pacific GP9s in 1959, EMD introduced the GP20 in 1962. The turbochargers increased the output rating of EMDs model 567 16-cylinder engine from 1750 to 2000 horsepower.



Atlas has just released a new production run of N scale GP20 diesel locomotives.



Road names are EMD Demonstrator, Conrail, Southern Pacific, and Burlington Northern.



Atlas Silver DC models of the GP20 are sound-ready and come with a speaker to simplify installation of an after-market decoder. Atlas Gold DCC models are equipped with LokSound DCC sound decoders.



All versions feature directional lighting with LEDs, dual brass flywheels, and magnetic knuckle couplers. For additional information contact a dealer or visit www.atlasrr.com.



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R. Bale

PRR P70 COACH

The P70 was the Pennsylvania Railroad's first 80' all-steel coach. The P prefix designated a passenger car while the 70 indicates the length of the passenger compartment. Between 1907 and 1929 over 1,000 of the heavyweight coaches were built in Altoona and by other car builders. The design was standardized except for the windows at the washroom end of the cars which varied slightly between builders. The early cars featured 88 seats, but as of 1926 they were built with just 80 seats. After the installation of air conditioning, which began in 1933, the cars were identified as P70R.



Broadway Limited has released N scale P70 coaches in several different decorating schemes.

Pennsylvania Railroad P70 coaches, both with and without air conditioning, will be available in Tuscan red in both 1931-1937 and 1939-1941 variations.



P70R cars with ice AC equipment mounted on the underframe will be available in PRR's 1945-1948 scheme.



Pennsylvania-Reading Shore Lines P70 coaches with no AC will be decorated in the road's

1940s scheme. Four-car sets of PRR P70R coaches in Tuscan red will be available both with and without AC.



80' coaches will be available decorated in fantasy schemes for

Central New Jersey (Blue Comet), and New York Central (two-tone gray).



Additional decorating schemes for the N scale 80' coaches include Maine Central (green and gold), and Canadian National (green and black).



Broadway Limited has scheduled an April release for a group of N scale stock cars fitted with cattle and hog sound effects. The design of the model was influenced by a 40' class K7A stock car developed by the Pennsylvania Railroad in the 1930s.



The BLI models are equipped with motion-operated on/off technology so that livestock noises can be heard when the train moves or is jostled. Each road name is available with a choice of cattle or hog sounds.



Road names will be Chesapeake & Ohio, Missouri-Kansas-Texas, Nickel Plate, Pennsylvania, Southern Pacific, Union Pacific, Western Pacific, and Union Stock Yards. Undecorated cars with sound will also be available. For additional information contact a dealer or visit www.broadway-limited.com.



Jacksonville Terminal is selling N scale 53' high-cube 6-42-6 corrugated containers decorated for Steve King's Virginia Midland.

This the first in a new series, named the Visionary Series, of containers that will be decorated for well-known model railroads including Tony Koester's Allegheny Midland, and Allen McClelland's Virginia & Ohio. For additional information visit www.jtcmodeltrains.com.



KatoUSA is selling N scale 5-unit Gunderson MAXI-I double stack cars with 10 removable 40' containers.



Road names for the well-cars include BNSF, Maersk, and TTX (new logo).



Each container has a magnet and a metal plate to hold it to the bottom of the well car or to the top of another Kato container. For more

information contact a dealer or visit www.katousa.com.



Micro-Trains dealers are accepting advance orders for a special 3-pack of 60' Union Pacific high-cube Plate F boxcars with rib sides and double plug doors. The model will have separate end ladders and brake rod detail, etched-metal brake platforms, and roller-bearing trucks with 36" metal wheels. Delivery is planned for May 2021.



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New Micro-Trains models available now include this 89' BNSF enclosed auto carrier. The N scale model is based on a prototype built in 2015.



Micro-Trains new 39' Southern Pacific tank car displays a white diamond with an S on the dome indicating the car was used for liquid sugar loading only.



Just two of Toledo, Peoria & Western's 40' boxcars with Superior sliding doors received this dark green paint scheme with yellow lettering. Like the prototype, Micro-Trains N scale

version rides on Bettendorf plain-bearing trucks.



This 2893 cu. ft. triple-bay covered hopper was one of 10 cars the National Sugar Refining Company decorated in the eye-catching Jack Frost Cane Sugar scheme.



Completing the list of new ready-to-run models from Micro-Trains is this 14-panel 50' gondola with a removable

cover. The N scale model follows a prototype built in 1965 that was equipped with Barber roller-bearing trucks. For additional information on Micro-Trains models contact a dealer.



Mini Prints has several new N scale figures of contemporary railroad



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workers. The figures are available as unpainted 3D resin prints. For more information visit miniprints.ca.



Rapido will soon begin production of a New Look Bus, also known as a Fishbowl Bus. The 1:160 scale model accurately

replicates the more than 45,000 prototypes that served communities throughout North America from the late 1950s into the 1990s.



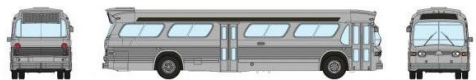
Rapido's N scale model replicates a TDH-5303 prototype with single stream rear doors. It has a seating capacity of 52 passengers plus

the driver. The model accurately represents an early generation of the bus. A video highlighting Rapido's new N scale bus is available at www.youtube.com/watch?v=SJyhpeSthLQ&feature=youtu.be.



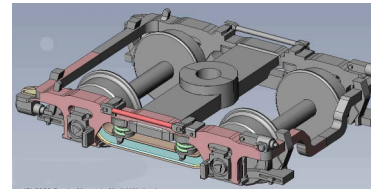
Decorating schemes on the initial release will be Boston, GO Transit,

Montreal, Santa Monica, and two schemes each for New York City and Toronto. Busses with generic paint schemes will be available in blue, red, white, and silver.



For additional information contact a dealer or visit www.rapidotrains.com.

Jim King of **Smoky Mountain Model Works** shared a computer image of an N scale General Steel Casting truck for a



New York City R32 subway car he recently produced. The truck, less wheels, was printed in clear resin at .002" layer thickness resulting in maximum detail.



Based on the success of the truck, King is considering designing N scale versions of the New York City T.A. R-32 subway cars for 3D resin

printing. If such a project moves forward, it may not be limited to N scale. Interested parties may contact Jim King thru his web site at smokymountainmodelworks.com/design-rp-urethane.html.



Trainworx is booking advance reservations for a new production run of its N scale 4427 cu. ft. Pullman Standard PS2CD covered

hopper. The ready-to-run N scale models will have etched metal roof walks and grab irons, and road specific trough hatches. Road names in this run will be CSXT, B&O Chessie System, Northern Pacific, Rock Island, Cargill, and two MKT schemes. Delivery is planned for the 1st quarter of 2022. Reservations can be made through a dealer or by contacting InterMountain Railway at www.intermountain-railway.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

Black Cat Decals has two sets of water slide decals for HO scale CNR slab side covered hopper cars. The set for a silver car includes a red CN noodle. The second set has red block



letters for a grey hopper. Visit www.blackcatdecals.com/product-category/ho-decals/cnr/cnrfreight-cars for additional information.



Great Decals has new N scale decals for New York Central Rail Diesel Cars.

Each set includes road names and numbers, and the distinctive safety striping of the Budd-built RDCs. Penn Central applied these stripes to post-merger New Haven Budd cars.

Also new from Great Decals is an HO scale lettering set for Richmond, Fredericksburg, & Potomac 9000 series Thrall 54' covered hopper. Sufficient material is included to decorate two hopper cars. The set includes the full road name and block letter abbreviation, road numbers, heralds, dimensional and capacity data, consolidated lube plates, and Kartrak-ACI Labels.



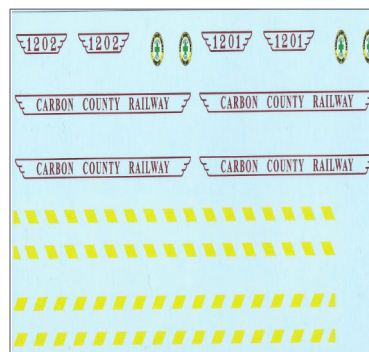
Great Decals has also released new HO scale water slide lettering set for Chesapeake & Ohio L-1 streamlined 4-6-4

Hudson locomotives. The decal set includes road names, road numbers, 'donut' heralds, striping, number boards, and tender data. Also new is a reissue of a white decal lettering set for

Virginian Railway G-5 low-side gondolas. Each set provides heralds, road names, side and end road numbers, and dimensional data specific to G-5 cars. Repack stencils and 12 canned road numbers are included. Although suitable for general application, this decal set is specifically designed for the Sunshine kit and Mantua 11-panel gondola. For additional information visit <http://greatdecals.com/WSM-154.JPG>.



Mask Island is selling HO scale water slide decals for locomotives of the Atlantic & Eastern Carolina Railroad. For more information visit www.maskisland.com.



German-based **Model Railroad Works** has released new HO scale decals for Carbon County Railroad's SW9 switch engines. The set provides enough material to letter both SW9s owned by the Utah-based railroad. For additional information send an inquiry to info@modelrailroadworks.de.

The **Speedwitch** line of HO scale freight car decals has been transferred to **National Scale Car**. The majority of the former Speedwitch decals are available and can be searched and ordered at nationalscalecar.com/decals-ho-scale. Out of stock decals are scheduled for reprinting, however, delays are anticipated due to the current pandemic.

Tichy Train Group has announced the availability of a new full-color Decal Catalog. The catalog provides information on some 450 railroad related decals. To access the catalog visit [www.tichytraingroup.com/Portals/0/Instructions/2020 DECAL CAT for wep rev 1.pdf?ver=2021-02-03-125112-000](http://www.tichytraingroup.com/Portals/0/Instructions/2020%20DECAL%20CAT%20for%20wep%20rev%201.pdf?ver=2021-02-03-125112-000).



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! BRIEFLY NOTED AT PRESS TIME ...

American Limited Division of San Juan Model Co. has released HO scale models of GATC 16,000 gallon welded tank car. Decorating schemes include several variations for Spokane Portland & Seattle; Northern Pacific, and Santa Fe. For details visit www.americanlimitedmodels.com ...

Atlas has completed another release of its HO scale ACF 5,800 cu. ft. quadruple bay CenterFlow covered hopper. Road names are Americas Styrenics, BASF, AMOCO, Eastman Tennessee, Himont USA, Oxyvinyls, Polyone, Shintech, and Wells Fargo Rail ...

Atlas is taking reservations for an HO scale Gunderson Multi-Max auto rack. Details including a list of road names are available at download.atlasrr.com/March2021MultiMaxConsumerOF.pdf?mc_cid=8855766aae&mc_eid=6bff0ec9ce ...

Bachmann has released HO and N scale 2-6-2 Prairie steam locomotives decorated for Union Pacific, Canadian National, Baltimore & Ohio, Northern Pacific, and Chicago, Burlington & Quincy. The N scale version is also available for Pennsylvania, Southern Railway, and Santa Fe ...

Morning Sun Books has announced the release of Volume 2 of *Conrail in the Norfolk Southern/CSX Era* ...

RailSmith has added Southern Railway lightweight sleepers to the list of N scale cars available for the NYC/SOU/FEC Royal Palm. ■



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MARCH

Due to COVID-19 restrictions, please check with any organization hosting an in-person event for the latest status of the event.

Ongoing 2021

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available. For more information visit www.opsig.org/Virtual. Past meets are available online at www.opsig.org/Virtual/Past.

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. “New Tracks” Meetup, hosted by Jim Kellow, MMR. See www.facebook.com/newtracksmodeling for more information.

ONLINE, Facebook & YouTube, dates vary, see Facebook page. “NMRAX” organized by Gordy Robinson, Martyn Jenkins, Gert Muller, Jordan Kramer. See www.facebook.com/groups/nmraxgroup for announcements.

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics. Archive available at www.youtube.com/c/4DPNRMovies.

ONLINE, Zoom, Second Tuesdays, 8pm EST. “Off the Beaten Track” featuring Narrow Gauge layouts and manufacturers. For more information visit groups.io/g/NNG.

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March-April 2021

ONLINE, Zoom & YouTube, March 20-21, New Tracks 4th Virtual Train Show, 1pm Eastern Time. Register at newtracksmodeling.com/train-shows.

ONLINE, Facebook & YouTube, March 27, NMRAX, organized by Gordy Robinson, Martyn Jenkins, Gert Muller, and Jordan Kramer. See www.facebook.com/groups/nmraxgroup for more information.

ONLINE, Facebook & YouTube, April 10-11, NERx – NMRA Northeastern Region event. For more information visit www.nerx.org.

ARIZONA, PHOENIX, March 20, Adobe Mountain Desert Railroad Swap Meet, sponsored by Sahuaro Central. Adobe Mountain Desert Railroad Park, 22822 N 43rd Ave. For more information visit www.arizonamodeltrains.com/am.shtml.

Future 2021-2022 by location

NEW ZEALAND, DUNEDIN, May 8-9, Dunedin Model Train Show. Taieri Bowling Club, 12 Wickliffe Street, Mosgiel. For more information email dunedinmodeltrainshow@gmail.com.

CALIFORNIA, IRVINE, September 8-11, Pacific Southwest Region/NMRA Convention.

CALIFORNIA, SANTA CLARA, CONVERTED TO VIRTUAL – July 6-10, 2021, Rails By the Bay, 2021 NMRA National Convention. The convention will be conducted as a virtual event with pre-recorded content and live Q&A's. For more information visit www.nmra2021.com.

COLORADO, COLORADO SPRINGS, May 22, TECO Model Train Outdoor Swap Meet. Chapel Hills Mall, 1710 Briargate Blvd. For more information visit www.tecoshow.org.

FLORIDA, MELBOURNE, June 5, September 4, December 4, Original Melbourne Train and Toy Show, sponsored by Schultz Space Coast Trains, Azan Shrine Center, 1591 W Eau Gallie Blvd. For more information visit schultzspacecoasttrains.com.

FLORIDA, TALLAHASSEE, June 26-27, 30th Annual Tallahassee Model Railroad Show and Sale, sponsored by Big Bend Model Railroad Association, 441 Paul Russell Rd. For more information visit www.facebook.com/events/745873359647741.

GEORGIA, CARTERSVILLE, October 2-3, 2021 Piedmont Division Model Train Show, Clarence Brown Conference Center, 5450 GA-20. For more information visit themodeltrainshow.com.

INDIANA, FRANKLIN, May 15, Franklin Train Show, presented by the Central Indiana Division of the NMRA. Johnson County Fairgrounds. For more information visit www.cidnmra.org/services.

MISSOURI, St. LOUIS, August 7-14, 2022, NMRA National Convention and National Train Show.

NORTH CAROLINA, HICKORY, September 1-4, 41st National Narrow Gauge Convention, Hickory Metro Convention Center and Crowne Plaza Hotel. For more information visit 41nngc.com.

PENNSYLVANIA, KUTZTOWN, May 15, July 17, August 28, all 2021. Renningers Model Train Meet, 740 Noble Street. For more information see renningers.net/events/model-train-meet. ■



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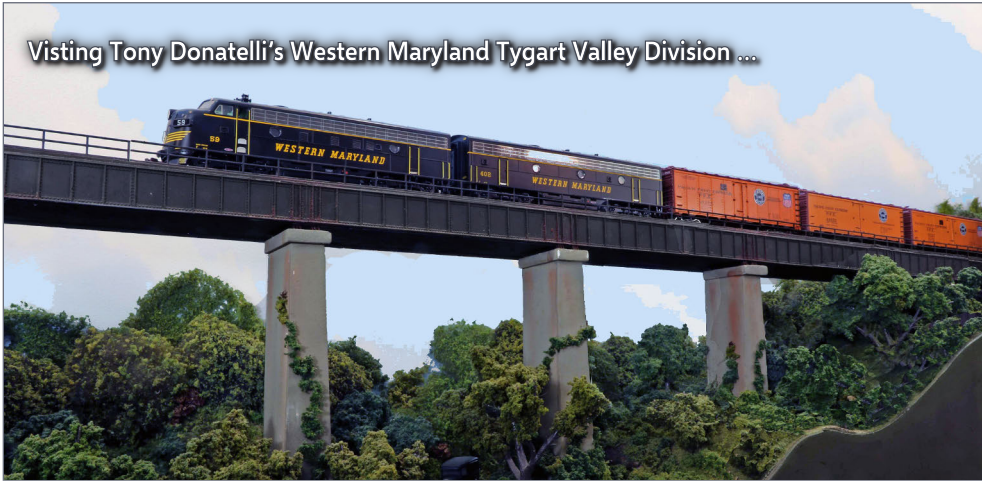
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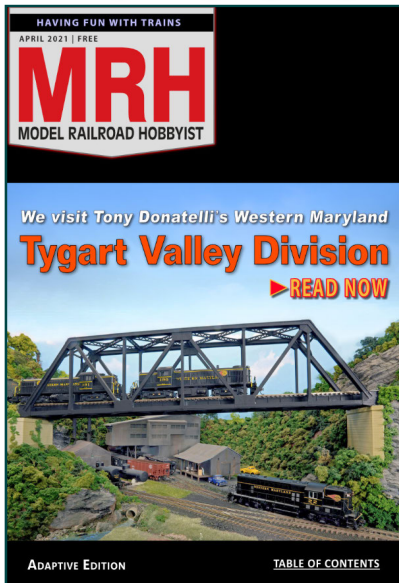
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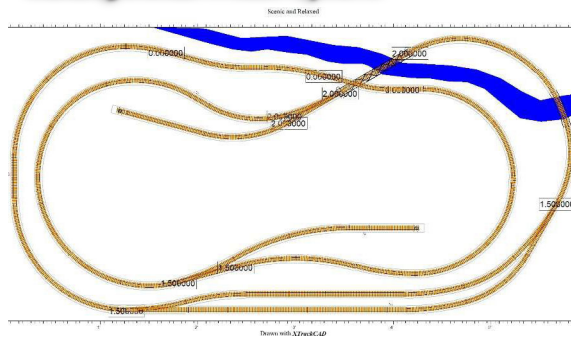
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